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TREE AND SERPENT WORSHIP IN INDIA.*

THIS great work, brought out under the patronage of our Indian government, in which Mr. Fergusson gives the crowning effort to the labours of his predecessors by restoring as far as possible two very ancient Buddhist topes, a word conveying a similar meaning to our word temples, of India, has an especially anthropological side, which has indeed been brought into view, and even discussed by Mr. Fergusson himself. Indeed it is an essentially anthropological book. Still, there is in it quite sufficient materials for other inquirers, and other views than those advocated by its learned author.

His first attempt is to show that, among primitive superstitions, tree and serpent worship have been very general in all quarters of the globe, almost universal. In this he has fully succeeded. That trees clothed with beauty, and also with mystery, which soar far above the regions to which man can attain, which commune with the heavens, with the spirit of the storm, and are familiar with the lightning's flash, which teem with myriads of virtues, and of beneficent uses to man, should be associated with supernatural notions in his mind, might have been expected, if we had not learned their sacred character in almost every region, in the east as well as the west. The Kirgiss Tartar sees in them an object of adoration, and the native Irish venerate them. It is equally apparent that the mysterious gliding reptile, endowed with such lethal forces as to exercise the power of life and death, was certain to ensure the dread, and attract the devotion of primeval man. In Egypt, in Greece, and in India, serpents have

* *Tree and Serpent Worship: or Illustrations of Mythology and Art in India in the First and Fourth Centuries after Christ. From the Sculptures of the Buddhist Topes at Sanchi and Amravati. Prepared under the authority of the Secretary of State for India in Council. With introductory essays and descriptions of the plates. By James Fergusson, Esq., F.R.S. London, Indian Museum, 1868.*

been objects of worship of one kind or another in all ages. So that Mr. Fergusson has fully made out the position he has maintained in the introductory chapters of this book. The connection with the main subject of the work is not at once seen to be so intimate and so necessary as might have been expected. It is true that we have repeated over and over again in the sculptures of these wonderful structures, the worship of both trees and serpents, as well as that of many other material objects. Mr. Fergusson's opinion is, that tree and serpent worship are the superstitions of a Turanian race, and that they are altogether antagonistic to the tastes and feelings of the Aryans. Hence his pointed allusions to these themes.

The ancient topes of India were sacred structures of a somewhat similar nature in principle to barrows or tumuli, which cover the remains or relics of the dead, and in this way acquire sanctity in the eyes of succeeding generations. They appear to be especially connected with Buddhism. The more celebrated ones are of great magnitude, and have received such accessions and enlargements by the efforts of successive devotees, as to equal, if not exceed, in some respects, the grandest temples of other lands. In this way they became sacred places dedicated to religious purposes, where numerous ceremonies were performed, and where great multitudes of people congregated, devoting their labours and their offerings to adorn and to magnify these topes.

Mr. Fergusson's work is dedicated to the illustration of two of the ancient topes, that of Sanchi and that of Amravati. The former is situated in Central India, to the north of the Vindhya mountains and the river Nerbudda, between the towns of Bhilsa and Bhopal; the latter lower down in the Peninsula, in Guntur, on the southern bank of the river Kistna, about sixty miles from its mouth. The remains of the Sanchi tope are more entire by far than those of that at Amravati. It is the largest of a series of topes in this neighbourhood, which extends over a district of about seventeen miles in an east and west direction, and ten miles north and south, some of which descend to the size of an ordinary tumulus. But the great one "consists first of a basement of a hundred and twenty-one feet in diameter, and fourteen feet in height. On the top of this is a terrace or procession path, five feet six inches wide, within which the dome or tumulus rises in the form of a truncated hemisphere to a height of thirty-nine feet. This was originally coated with chunam to a thickness of about four inches." Chunam is lime or plaster, and forms upon the tope a coating, something like a coating of bricks. "The most remarkable feature connected with this monument is the rail which surrounds it at a distance of nine feet six inches at the base, except on the south,

where the double flight of steps leading to the berm, or procession-path, reduces the width to six feet four inches. The rail is eleven feet in height, and consisted apparently of a hundred pillars, exclusively of the four gateways, two of which remain, which were added about the Christian era, and are covered with sculptured decorations of the most elaborate kind." (P. 87.) The age of the Sanchi tope itself is considered by Mr. Fergusson to date from the time of Asoka, 250 B.C.

Mr. Fergusson is inclined, upon the discussion of all the evidence that can be obtained upon the date of the Amravati tope, to conclude "that like our own cathedrals, the erection of this tope may have lasted for two or three centuries, or say from 200 to 500 A.D." (p. 162.) This tope is much more thoroughly destroyed than that at Sanchi, so that its remains are now only to be dug out of the mounds on the spot. Its entire diameter was originally about two hundred feet. It was surrounded by two sculptured rails, an inner and an outer one, between which was an elevated procession-path, paved with slabs thirteen feet long, running across the pathway. It seems to have been quite unlike the tope at Sanchi, for the inner rail surrounded an inclosure with buildings upon it, and having in the centre a Dagoba, or tumulus, only about thirty feet in diameter. The procession-path must have been, in its original state, of considerable magnificence. On the outer side it was surrounded with the rail of twelve feet in height; on the inner with one of six feet high, both of which with their pillars were sculptured with innumerable figures, representing a great variety of scenes, probably mainly sacred; but some of them appear to be historical, and others domestic. It is difficult to give an idea of the elaborateness and elegance of the sculptures upon these rails, without an examination of the original marbles, or of Mr. Fergusson's photographs and lithographs. He says, those of the inner rail resemble ivory carvings more than anything else. He observes in one place, "At Amravati there were apparently twenty-four pillars in each quadrant, and eight, at least, in each gateway, say 112 to 120 in all. This involves 230 to 240 central carved discs, all of which were sculptured; and as each of these contains from twenty to thirty figures at least, there must have been in them alone from 6,000 to 7,000 figures. If we add to these the continuous frieze above, and the sculptures above and below the discs on the pillars, there probably were not less than 120 to 140 figures, for each intercolumniation, say 12,000 to 14,000 in all. The inner rail contains probably even a greater number of figures than this, but they are so small as more to resemble ivory carving. Except the great frieze at Nakhon Vat, there is not, perhaps, even in India, and certainly not in any other

part of the world, a storied page of sculpture equal in extent to what this must have been when complete. If not quite it must have been nearly perfect, in all probability less than a century ago." (p. 166.) This may afford some idea of the immense work of destruction done and doing by the great civilised nations of Europe in modern days, and in all parts of the world.

The primary object of Mr. Fergusson's volume is to give the western world some adequate idea of these two ancient Indian topes, and of the profusion of sculptures executed upon their gateways and rails. Many of the marbles are in the Indian Museum in this country, and of others, very careful and accurate drawings have been made at both topes, some years ago, chiefly by two Indian officers, Lieut.-Col. Maisey and Col. Mackenzie. The marbles in London have been photographed with great skill by Mr. W. Griggs, who has besides executed the lithographs, and to him, as well as to Mr. Fergusson, we are much indebted for the proper illustration of these wonderful structures. The latter carefully describes each of the subjects of the plates as they pass in succession before him, and gives the reader the aid of his great knowledge of art in general, and of Indian art in particular, and of his learned researches into Indian history and religion, in explaining the design and purport of the scenes represented in the sculptures.

As already hinted, Mr. Fergusson attributes both these topes, with all their elaborate decorations, to the disciples of Buddha, and of this there cannot be any doubt. They are both of them sacred structures of the Buddhists, whose disciples do not any longer tread the soil of this portion of India, or, indeed, any other portion of India proper. Buddhism was a very ancient religion in India. It may be said without any hesitation that it originated in metaphysical speculations upon matter and upon man, his origin and destiny. It is probable that Brahmanism, the religion of India at this day, is as ancient, if not more ancient, than Buddhism, and it is not so essentially a dissimilar doctrine, at least in its origin, and its philosophy. General Cunningham, a very high authority, speaking of Buddhism, after the days of Saky Muni, or Gotama, whom some regard as its founder, others as the great reviver and reformer of Buddhism, gives this view of the subject.

"I believe that as Buddhism gradually attained an ascendancy over men's minds, the whole of the Brahmanical school, by an easy change of phraseology, accommodated their own doctrines, so as not to clash with those of the dominant party. At least it is only by a supposition of this kind that I can account for the great similarity which exists between the philosophical systems of Buddhism and those of the Brahmanical Sankhyas. This similarity, which has already

been noticed by Colebrooke, is, indeed, so great as to render it difficult to discriminate the doctrines of the one from those of the other. The phraseology varies, but the ideas are the same ; so that there is a distinction, but without a difference.”*

The disciples of these two religions, the doctrines of which we will pass over as they are very recondite and complicated, and may be safely said to be differently propounded by different authorities,† have manifested from the earliest period of Indian tradition a great antagonism, which has been displayed in fanatical opposition and strife. Still the similarity of doctrine has been vouched by one of the first of Indian scholars, as we have seen. Mr. Fergusson appears not to take this view. We shall see by-and-by that his hypothesis, as displayed in all parts of this volume, is quite different. He represents the religions as essentially at variance ; so much so, that they are the different results or products of two very distinct races of people, whose minds may be said to be constructed upon different, almost opposite, principles, operating upon the grand subject of religion ; so that Buddhism and Brahmanism are the effects of two quite distinct causes. Brahmanism he regards from a higher point ; probably in its supposed Aryan origin, as a pure and spiritual religion, the religion of the most exalted minds ; whilst Buddhism is the religious manifestation of a much lower and baser intellect. In the commendatory tone he maintains towards the former he is much influenced by the ancient Sanskrit poems called *Vedas*, which are considered to be the oldest and the purest expressions of this faith.‡

* *The Bhilsa Topes; or, Buddhist Monuments of Central India*, p. 38. Lond. 1854.

† Modern Darwinism may clearly claim a Buddhist origin. “The basis of the system is a declaration of the eternity of matter, and its submission at remote intervals to decay and reformation ; this and the organisation of animal life are but the *results of spontaneity and procession*” ; something like the “continuity” of a modern philosopher, “not the products of will and design, on the part of an all-powerful Creator.”—*Ceylon*, by Sir Jas. Emerson Tennant. Third edition, i, 531.

‡ The definiteness, if not the exalted purity, of doctrine of the Vedic poems, may be judged of by the first sentence of Professor Max Müller’s “Prospectus of a Translation of portions of the Rig-Veda” : “After twenty years spent in collecting and publishing the text of the Rig-Veda with the voluminous Commentary of Sāyana, I intend to lay before the public my translation of some of the hymns contained in that collection of primeval poetry. I cannot promise a translation of all the hymns, for the simple reason that, notwithstanding Sāyana’s *traditional explanation of every word*, and in spite of every effort to decipher the original text, either by an inter-comparison of all passages in which the same word occurs, or by etymological analysis, or by consulting the vocabulary and grammar of cognate languages, there remain large portions of the Rig-Veda, which, as yet, yield *no intelligible sense*.”

But it will be better to state Mr. Fergusson's views as far as we can in his own words. Mr. Fergusson tells us that the hardy and warlike Aryans, or Sanskrit-speaking race of people, derived from the countries now known as Bokhara and Afghanistan, entered India across the Upper Indus—there seems no good reason for doubting that it was at or near Attock—and eventually spread themselves throughout the whole of the valley of the Ganges and the countries between the Vindhya and the Himalaya mountains. That, at intervals of from five to ten centuries, horde after horde of these Aryans have crossed the Indus and settled in the fertile plains of India. Another race,—

“A Turanian race, known as the Dravidians, and speaking Tamul, or languages closely allied to it, entered India probably earlier than the Aryans, but across the Lower Indus, and now occupy the whole of the southern part of the peninsula nearly up to the Vindhya mountains. . . . It is not quite so clear whether there was not a third race occupying the countries north of the Vindhya and between them and the Himalayas, of which they were dispossessed by the Aryans. The language of the superior race has so completely taken possession of every department of literature at the earliest period to which our knowledge extends, that we have no written record of the existence of this aboriginal people; and the blood of all has in modern times been so mixed by migration and colonisation, that it seems impossible to dig back to the roots through the jumble of languages and races that now exist in the valley.” (P. 57).

There are few passages in which Mr. Fergusson explains his views on the subject of the races of India and other parts of the world more fully than that in which he speaks of the legendary tales collected by the brothers Grimm, concerning serpents, dwarfs, giants, and other monsters of fairy stories, which have had such an extensive prevalence over Germany, Scandinavia, and anciently Greece; still, no doubt, with great variations. He says,—

“The usual mode of accounting for this identity, which can hardly be accidental, is to *assume* that the tales were originally invented by Aryan nurses beside the cradles of the race in Balkh and Bokhara, and that they were carried east and west by the alumni when they set out on their travels some four or five thousand years ago. The results of my reading have led me to conclusions widely different from this fashionable hypothesis. My belief is that all the serpents and dragons, all the dwarfs and magicians of these tales, all the fairy mythology, in fact, of the east and west, belong to the Turanian races. These, as I have frequently had occasion to mention, underlie the Aryan races everywhere in Europe as in Asia, and occasionally crop up here and there through the upper crust, often when least expected. So far as I understand the idiosyncracy of the two races, nothing can be more antagonistic to the tastes and feelings of the Aryans than these wild imaginings; while few things, on the contrary, could be more con-

genial to the comparatively infantile intellect of the Turanian race."¹ (P. 73).

This view it may be safely said is an advance upon the "fashionable hypothesis," which is at the same time highly improbable, although it is by no means a relinquishment of the extravagance of deriving the Aryans from the east to come into Europe, to establish civilisation and the nations of Europe. This Mr. Fergusson appears still to suppose to be true.

Taking the author's statement literally, it is the Turanian immigrants who occupied the country of the Dravidians. Hence we should anticipate that this region would be the special seat of Buddhist remains, as Buddhism was especially the Turanian religion. But such is not the fact. Amravati is situated nearly on the border of this region, and "though there were Buddhists in Dravida-desa, there are no traces of Buddhist buildings or establishments now to be found south of Amravati." (P. 58). And Mr. Fergusson says distinctly that it does not appear that the Dravidian races ever were converted to Buddhism.

We appear thus to be thrown entirely upon the people who occupied Central India and the Valley of the Ganges, before the presumed immigration of the Aryans for the origin of Buddhism. In one place Mr. Fergusson says expressly, "the province now known as Upper Bengal, more especially the districts of Tirhoot and Behar, were assuredly the cradle of Buddhism." (P. 225). These people the author would have us to recognise as Turanians, or, what other ethnographers name, aborigines. And here we hope to be excused for saying, this seems to be a weak point in Mr. Fergusson's hypothesis. He assuredly would not put back the origin of Buddhism to a period anterior to the earliest invasion of the Aryans; indeed, on the contrary, in some passages he appears to regard Sakya Muni (623-543 B.C.) as the founder of this religion. But, if we err in taking these expressions too literally, as is very probable, we are still justified in saying, he assuredly would not put back the origin of Buddhism to a period anterior to the earliest invasion and settlement of the Aryans in this portion of India. Hence we must be reduced to the necessity of assuming that this peculiarly Turanian religion took its rise among a Turanian race, which had been invaded and conquered by Aryans and had mingled with Aryans for ages before this origin. A Turanian race thoroughly subdued by the hardy and warlike Aryans, or Sanskrit-speaking race, "to whom is to be attributed that language which has so completely taken possession of every department of literature at the earliest period to which our knowledge extends."

¹ Our author ascribes great importance to a mixture of blood, and

explains this singular phenomenon by such a mixture. He says, after making use of the term *Hindus*—"meaning by that term the civilised race who had been the dominant class in India for at least two thousand years before the time to which we are now referring. Originally these people were no doubt pure immigrant Aryans; but, before Sakya Muni preached his reform, their blood had become so mixed with that of the aboriginal and inferior races, *as to render the success of that new gospel possible*. They still, however, retained the civilisation and the pre-eminence which the original intellectual superiority of the Aryans had imparted to them." (P. 92.) This is as if we were to attribute a great religious reform in France at the present day, not to the Frankish blood which exists in that country, but to the Celtic blood, on the ground that we thought the new religion was essentially a Celtic faith, perhaps something like Druidism.

It should also be recollected that Mr. Fergusson admits that Sakya Muni himself was an Aryan, and yet he preached a religion so repugnant to Aryans, that our author says, "it may be safely asserted that no Aryan race, while existing in anything like purity, was ever converted to Buddhism, or could permanently adopt its doctrines." (P. 57.)

Mr. Fergusson's work is of great interest in relation to serpent worship, or the manifestation of religious veneration towards serpents. He has striven to show that this kind of religious sentiment has prevailed in almost all countries. In India it is met with at the remotest period to which we can refer, and it exists now. It seems to us, as already explained, to be an expression of a blind sentiment towards the supernatural implanted in the mind of primeval man. In India it has always played an important and extended part in mythology, under the name of "Naga," the Sanskrit term for serpent. In the ancient poems there are endless fables about a naga race of people, and they constantly recognise naga royal families, as well as an infinitude of other absurdities. Mr. Fergusson considers that there is an intimate relation between this naga race, and also serpent worship itself, with the Turanian people. Besides the use of the term in the sense of a snake, it is also applied to some of the wild or aboriginal tribes of India, in the northern parts of Assam. These are not known to be devoted to serpent-worship; but it will be readily seen how the fables of the Indian poems may have had their origin in the hill tribes. Mr. Fergusson, as just mentioned, is much disposed to consider serpent-worship, wherever it exists, as a mark of a Turanian race. It may be doubtful whether these Buddhist sculptures carry out this view. He uses the term Turanian in such a comprehensive manner, as already hinted, that it has the meaning of an aboriginal race. He thus expresses his views upon this subject.

"If there is one point which comes out more clearly than another in the course of this investigation, it is that serpent worship is essentially that of a Turanian, or at least of a non-Aryan people. In the present state of the inquiry it would be too bold a generalisation to assert that all Turanian races were serpent worshippers ; and still less can it be affirmed that all who looked on the serpent as a God belonged to that family of mankind. It is safer, however, to assume that the whole tendency of the facts hitherto brought to light, lies in that direction ; and it seems probable that eventually the worship of the serpent may become a valuable ethnographic test of the presence of Turanian blood in the veins of any people among whom it is found to prevail." (P. 40.)

When we come to examine the sculptures themselves, which are well represented in the plates, we find, apparently, judging chiefly from the dress and other peculiarities, different tribes, or races of people. Mr. Fergusson has directed his attention to the interpretation of these, but they will probably admit of much further study. He considers that the people represented may be divided into two classes. The first he designates "Hindoo," or the original Aryan race, who had been the dominant class in India for at least two thousand years before the erection of the Sanchi Tope, during which time they had mixed their blood with the aboriginal and inferior races. These are generally distinguishable by their costume, which is the *dhoti*, *i. e.*, a scarf wound round the loins, and then brought up between the legs and thrust under the folds which cross behind, or sometimes before. This is the manner in which the *dhoti* is worn at the present day. The turban covers the head. Sometimes they have a cloth passed over the shoulders and obliquely across the back, which Mr. Fergusson calls by the modern name Chudder. This costume is pretty much the same as that of the present inhabitants of India, not Mahomedans, which is distinguishable by not being shaped, not being needle-made, but worn as woven by the loom.

For ornaments both men and women wear bangles round the wrists and round the ankles, and have a large ear-ornament, which is a thick object thrust through the lobe of the ear, the women having besides heavy bead necklaces. What is most remarkable in these women, is the exceeding scantiness of their dress. With a large bordered head-dress, hanging half way, and, in some cases, all the way down the back, the ear-ornaments and bangles above-mentioned, and a highly ornamental girdle, passing low down around the hips, they are many of them fully clothed. This nude condition is not universal, although very general, as a few wear *dhotis*.

In many of the photographs, particularly of those from the Amra-vati tope, we see people with handsome features, mostly of a heavy

cast, some of them with pleasing countenances, with good noses, people who greatly resemble the Hindoos of the present day. There is much room for anthropological purposes, for a series of careful photographs of the most characteristic heads, of a good size, taken from the marbles, so as to afford studies of the people represented in the sculptures. All the photographic delineations in this volume have been taken as it were for architectural purposes, or at most for art purposes. The marbles should be studied more minutely for ethnological purposes. And it would be a very proper and also desirable thing if a few of such photographs as have been suggested of the ancient inhabitants of India, were added to the great work now issuing by the Indian government, under the title of "*The People of India.*"

But the photographs of this volume, the lithographs not possessing the same physiognomical value, which are mostly small, as far as the portraits of the people are concerned, may, like those of the Egyptian and Assyrian monuments, be quoted in proof of the permanency of race. All careful observers have concurred in the opinion, that the people represented in the sculptures and paintings of the Egyptian tombs are the same race as the people who inhabit the Nile valley at the present day. Those remarkably fine people of the most ancient civilisation on the face of the globe, who in a recent ethnological concatenation have been identified with the most uncivilised and most uncivilisable race of which we know anything in any period of the world's history, have left their lineal and unmistakable descendants among the subjects of the present Pasha. And it is the same with the Assyrian monuments, which depict a people quite contrasted with the ancient Egyptians. Those who have studied them in juxtaposition with the present inhabitants of the valley of the Euphrates, tell us that there exists the greatest resemblance between the two. Here in India we have the same phenomenon, the Hindoos of the present day being sculptured in the marbles of the topes dating from the period of the Christian era. These are all striking evidences of the same law of permanence of type. Whether the resemblance of the Hindoos of that remote period with the Hindoos of to-day, will afford any support, or otherwise, to the Aryan hypothesis, we will not say. For it does not appear that by going back from the present time, when the philologists consider themselves under the necessity of supposing an Aryan origin for the Hindoos, for nearly two thousand years, we meet with any proof of arriving nearer to an epoch when the supposition was not equally needed upon the same grounds. This, we are fully aware, is no difficulty in the way of those who maintain the Aryan hypothesis; for they tell us that at

least five thousand years ago the Aryans descended from Bokhara and Afghanistan to the Gangetic valley, and brought Sanskrit with them. Still, it cannot be denied that the appearances are all in favour of the endurance of the same race of people in India from the remotest times to the present. If there have been any great changes, which we are required to suppose even by Mr. Fergusson, there is no evidence of subsequent change from the time of the building of the Sanchi tope to this day.*

The other, or second great class of people of the sculptures distinguished by Mr. Fergusson, have a different costume. They are clothed in a kilt, fastened round the loins by a cord, a cloak, or tippet, and something like a conical cap, which Mr. Fergusson considers to be either their plaited hair, or a piece of cloth or rope wound round the head in this conical shape. But their most remarkable peculiarity is that they wear beards of a peaked shape, whereas all those of the first class are devoid of beards and even moustaches. Their garments are shaped and made with a needle, not like those of the first class, which are worn just as they came from the loom. Mr. Fergusson is unwilling to affix any general name to the people of this second class, still he calls them "Dasyus," for this term, he says, has been given in the Vedas to the aboriginal people of India. He regards this second class as being the ancient representatives of the wild tribes of India, such as the Gonds, the Khonds, etc., of the present day. Their women also are readily distinguishable from those of the "Hindoo" race. They wear a petticoat striped like the kilts of the men, which appears to be gathered in at the knees, and a cloak or tippet is thrown over one shoulder. Although our author is disposed to regard this really better clad people as the aborigines of India, and as the inferior race, among whom the "Hindoo" people, having some tinge of Aryan blood in their veins, stand out as their superiors, it should be noted that this was not the opinion of his predecessors in this inquiry. General Cunningham and Colonel Maisey were inclined to regard this second class as priests or ascetics, *i. e.*, really a class superior in the eyes of the general population. Notwithstanding these difficulties, it must be admitted that Mr. Fergusson's opinion, the result of great research, must always have considerable weight.

There does not appear to be that distinction among the worshippers, or in the objects of their worship, which we might have expected or desired. Whether this may arise from the unsectarian, tolerant spirit of Buddhism is doubtful. But in the case of Plate lxx, which represents one of the pillars of the great rail at Amravati, we have in the centre the bearded people, who are there, wearing a breech-cloth and a close cap, worshipping a Buddhist emblem, the trisul ; in the

compartment on the left hand, the same people also seated worshipping the serpent emblem, or five-headed naga, to which are actually attached the sacred feet of Buddha ; and, in the compartment on the right hand, we have a group of lamas, or Buddhist priests, fully clothed in flowing robes, no doubt of yellow silk, as they have come down to the present day, with shaven heads, worshipping the trisul on a pillar, to the base of which the sacred feet are equally attached. In the seventy-first plate we have, in figure 1, the beardless and turbanned people, with their women, engaged in worship on one side of a pillar bearing the trisul, and having the sacred feet, and, on the other side, the lamas worshipping the same emblems.

This confusion of people and of objects of worship is most embarrassing in different ways, for it shows that there was no repugnance on the part of the worshippers, whether Hindoos or aborigines, to the worship of the serpent or of Buddha, that confusion was the rule in every respect, although the artist adhered to the delineation of each people and sect, if the term may be used, in their proper costume. Still it is remarkable that they are generally represented in separate compartments ; for instance, the lamas are not mixed with the other people, but stand or sit by themselves.

There is a hopeful expression of Mr. Fergusson's which must excite interest with anthropologists, where he says :

" We are very far indeed from any such knowledge of the modes of sepulture among the aborigines, as to be able to speak regarding them with anything like certainty. Ample materials, however, exist in India, and so soon as any one will take the trouble to collect and classify them, we shall from their graves be able to discriminate between the different races, and assign to each its proper locality, with a precision now entirely wanting to such researches." (P. 152.)

In the photograph, Fig. 4 of Plate xci, which is, according to Mr. Fergusson, the representation of Suddhodana, the father of Buddha, and his friends, a subject very similar in this religion to the annunciation of Christian artists, there is an appearance in the four men who are seated upon stools around the prince, which is not commented upon by the author. All these four persons have their right hands raised, the two first fingers extended, and the others closed, which reminds us of the sign used by Christian priests in " blessing," as it is called. In Plate lxxiv, Suddhodana is seated, with a halo round his head, holding up his right hand ; the forefinger and thumb are joined, and the rest of the fingers held upright,—no doubt, another sign.

When speaking of the worship of the horse in one place, for this animal is introduced as sacred in the sculptures, the author evidently makes some acknowledgment of Aryan difficulties. He says :

" This does not preclude the idea of this form of worship being

borrowed from Scythia. On the contrary, everything we learn from either Sanchi or Amaravati points to the north-west, and to countries beyond the Indus as the source whence everything took its origin. What the Buddhists derived from those countries was, however, directly antagonistic to anything which we know that the Aryans either possessed or affected, and must consequently be derived from some other race." (P. 216.)

Another singular anomaly in the views of Mr. Fergusson ought not to be passed over, especially as it is almost a postulate with our author that the Aryans are not an architectural race ; at first view, an extraordinary position, when it is usually affirmed that the Greeks were primarily Aryans. He says, that the Turanians are the great builders everywhere. In fact, he accounts not only for the temples but for the religion also of the Greeks from the prevalence of Turanian blood in Greece. This may seem to be a necessity if the Aryan hypothesis is to be upheld.

" Assuming the Veda and Zend Avesta to be exponents of the religious feelings of the Aryans, it is impossible to understand—if language is any test in such a matter—how a people speaking a tongue so purely Aryan as the Greek, could so completely have lapsed into a Turanian ancestral worship as we find that of Greece in its great age. Unless a great substratum of the inhabitants of Greece belonged to the Turanian family, their religion, like their language, ought to have presented a much closer affinity to the earlier scriptures of the Aryan race than we find to be the case. The curious anthropic mythology of the Grecian Pantheon seems only explicable on the assumption of a potential Turanian element in the population, though the study of the language fails to reveal to us its existence." (P. 12.)

In other words, language is the true and only basis of the Aryan hypothesis ; but the facts relating to religion require the admission of a non-Aryan race of people in Greece. On turning to language to support this admission, it at once becomes valueless as a test of the existence of this non-Aryan race.

One of the most important principles laid down by our author, upon which Mr. Fergusson's opinion as an artist and architect has the greatest weight, is that which he everywhere expresses upon the influence of Bactrian art as seen in the most ancient monuments of India. He is inclined to consider that this influence is displayed in the purest form in the time of Asoka, 250 B. C., to which he refers the Sanchi Tope. He says :

" We can now assert with confidence that all the permanent forms of art arose in India after its inhabitants were brought into contact with western civilisation, by the establishment of the Grecian kingdom of Bactria. It seems probable that such sculptures as we have of Asoka's reign were actually executed by Grecian, or at least by Yavana artists." (P. 221.)

An earlier passage to the same effect, which is also connected with

one of Mr. Fergusson's ethnological hypotheses, may possibly serve to explain this latter term.

"The knowledge that we have now gained of the early history of the art of sculpture in India, from the study of the examples at Sanchi and Amravati, enables us to point with equal certainty to Bactria as the fountain-head from which it was introduced. . . . We are now able to trace the Yavanas step by step, as they penetrated over the Upper Indus, and spread their influence and their arts across the continent of India to the very shores of the Bay of Bengal, at Cuttack, and Amravati. . . . But the people who did all this were not Greeks themselves, and did not carry with them the Pantheon of Greece or Rome, or the tenets of Christianity. They were a people of Turanian race, and the form of worship they took with them and introduced everywhere was that of trees and serpents, fading afterwards into a modified form of Buddhism." (P. 98.)*

This, upon the origin of Indian art, is very significant testimony when derived from such a source. The taste of that great people, led by Alexander to his eastern conquests, confessedly laid the foundations of Indian art as we see it in all subsequent ages, and we know nothing of Indian art before that epoch. This is a very important foundation should the scholars of a future period be led to inquire, what was the full extent of Grecian influence upon the oriental world in other matters, especially language.

* To this passage of our author a little more attention, of an ethnological kind, ought to be directed. The Aryan system, it is well known, is a system of inferences from beginning to end; still it may be questioned whether this practice of inferring race after race, which is Mr. Fergusson's method, should not be under some restraint. Here we have him inferring the invasion of India by a Turanian race across the Upper Indus, we might reasonably suppose, after the foundations of the Bactrian province, as they appear to have brought Greek art with them. We do not wish to insist upon the interpretation of Mr. Fergusson's language too literally, and allow that he may mean that his inferred Yavana Turanians crossed the Upper Indus long before Alexander's invasion. What we especially wish to call attention to is the fact that our author in all other parts of his work regards these invasions across the Upper Indus as the work of the hardy and warlike Aryans. Here he is constrained to infer an invasion of Turanians from the same source too.

QUATREFAGES ON THE PROGRESS OF ANTHROPOLOGY.*

HOWEVER well founded on reason any science may be, it is necessary not only that its truth be demonstrable, but that the reasons on which it is established be made known to the reading public,—to those who are disposed to inquire fairly and dispassionately into the reality of its pretensions,—ere it can be expected to command the assent, or obtain the study of the generality of mankind. And however extensive or however satisfactory may be the data from which the principles of any science are derived, until they are collected and systematically arranged so as to arrest the attention of those who are inclined to engage themselves in abstruse studies, the science itself can hardly be expected to make much way in the learned world. To Professor de Quatrefages, both the science of Anthropology and the learned world in general, are deeply indebted for his invaluable papers in the production of the work before us, which reduces to a complete and intelligible system the abstruse and difficult, and to many the incomprehensible, science of anthropology, embracing, during his investigations, a wide range of topics, and arranging disjointed facts in due order, so as at once to evince their bearing upon the subject. His disquisitions are always able, and his reasonings sound ; and although we cannot pledge ourselves to adopt every conclusion at which he arrives, we are delighted to accompany, in the pursuit of this or any other science, so enlightened, so earnest, and so dispassionate an inquirer after truth. Indeed, every student of philosophy, more especially of the highest branch of it, the philosophy of man, must join in a tribute of gratitude to the individual whose ability, whose bearing, and whose energy have been devoted to the production of the very valuable, interesting, and important work, the contents of which we are desirous of bringing before the English public.

Our author, at the commencement of his work, proceeds to the definition of the science of Anthropology, as “The History of Mankind considered from a specific point of view,” Introd., p. 1. This definition may not be considered by some to be in itself very determinate or very satisfactory ; but our author’s meaning is more precisely evinced as he proceeds. He subsequently goes on to expatiate on the vastness of the science, as embracing the various human groups ; and remarks (p. 3) that, in treating on them, the anthropologist is

* *Rapport sur le Progrès de l’Anthropologie.* Par M. A. de Quatrefages, Membre de l’Institut, Professeur au Muséum. Publication faite sous les auspices du Ministre de l’Instruction Publique. Paris, 1867.

not occupied only by mere physical, but that the intellectual and moral part of his nature equally demand our attention. He inquires, with great justice, at p. 5, "if the study of a plant or of an animal has merited the honourable name of *science*, how can we refuse it to the study of man?" Even in the study of bodies, "according to M. Chevreul, it is necessary to study three groups of properties,—the property physical, the property chemical, and the property organic" (p. 6). "Consequently, Anthropology, which I have already defined, constitutes a special science in every acceptation of the word" (p. 6.)

The first part of the book, which is devoted to an historical survey of the science, commences with (Ap. 1) the first period, extending, since Buffon, until the works of the Ethnographical Society (p. 9). What appears to us to be a somewhat inconvenient plan, has been adopted in placing the table of contents at the end of the work instead of at the beginning, where it would be most useful for reference. There is also a great want of an index to a voluminous and important work of this nature, containing such a vast amount of matter, and in which the different points of consequence, requiring to be referred to, are scattered about throughout the volume. Indeed, of all works, this one seems specially to require an index, as not only useful but indispensable. We venture to hope that both suggestions may be made use of, not only in the future editions in French, through which, we trust, the work is destined to pass: but also in the English edition of it, which we hope to see published shortly, which the work in every way deserves, and which, we feel certain, will be most welcome to a large and intelligent class of English readers.

In the first chapter, our author proceeds to take a survey of the opinions of Buffon, and other high authorities. He here remarks, with equal force and truth, that "when two men arrive at identical conclusions, by ways as different as the linguistic and that of physical examination, one is able to accept their assertions; there is every chance of their being true. Their discordance intimates at once where there are special difficulties, or whatever error has been committed on the part of either, it gives birth to reasonable doubts, and excites new researches,—it is, with them, a means to attain the truth" (p. 16). Buffon, Blumenbach, and certain linguists whom he mentions, he pronounces to be the founders of the science of Anthropology. He places a high value, also, on the works of Dr. J. C. Prichard, who, he says, is essentially of the school of Buffon.

In this part of his work, Prof. de Quatrefages speaks strongly as to the value of the information which anthropology has obtained through the efforts of missionaries, to whose proceedings anthropo-

logists have been thought by some persons, although very erroneously, to be opposed ; while, on the other hand, missionaries have acted very unwisely in not availing themselves of the information, and that of the most reliable and practical kind, obtained respecting the people with whom they desire to hold intercourse, and the best means of doing so, supplied by anthropologists. Our author observes, respecting missionaries in general, that "the missionaries have always followed closely upon travellers, whether geographic or naturalists. Several times they have even preceded them. In the pursuit of their habitual occupations they have often studied men more thoroughly than the most eminent lay travellers. Anthropology owes them much. Whether catholics or protestants, orthodox or dissenters, they appear occasionally to have exerted an energy which has done great service to science. . . . It is mainly to missionaries that we are indebted "for our knowledge of many parts of the world" (p. 25).

And, again, in a subsequent part of his work, he tells us that "the missionaries of all communions have most frequently opened the way to geographic discoveries ; and, thanks to their habitual occupations, they have collected on the subject of man many observations which the most eminent lay travellers neglected to make. More than one of them has lately rendered his tribute to science by important publications" (p. 41).

The history of the science of anthropology is followed up in the second chapter of this work, "comprising the last twenty years." He here remarks passingly, with equal force and truth, that among travellers "it too frequently happens that they inquire more about a country than its inhabitants, and describe more minutely the mammiferous animals or the birds than they do men. If they are occupied with him, they describe his habitation, his clothes, and his articles of dress, without saying anything about his actual character. This is no less the case, even in our day" (p. 36).

This is, doubtless, more the case with modern travellers than with those of ages gone by. Captain Cook, for instance, enters much more into the character, intellectual and moral, of the natives of distant lands, not before visited, with whom he came in contact, than most if any recent writers have been in the habit of doing. The missionaries have done some service in this respect, but not to the extent which might have been reasonably and fairly expected, considering how directly the nature of their occupation led them to observe minutely and in various ways the character and habits of those with whom they have had to deal.

In the present chapter Professor de Quatrefages gives a summary of works indispensable to the anthropologist, which develope the leading

principles of the science, and which were all of them produced during the present century. We have been rather led to regret, in connection with this part of the subject, that the present treatise has not embraced a review of the productions of the older writers on subjects connected with anthropology, long before it was formed into, or attempted to be classed as a separate science, many of whose investigations and observations are of the deepest interest and the highest value. Indeed, the study of anthropology is, in reality, as old as the days of Aristotle, certain of whose works, as also many of those of Plato, are of great value to anthropologists, although anthropology was not then recognised as an independent pursuit. From his days to our own, all the profoundest philosophical writers have treated more or less on anthropology, especially the writers of the middle ages, to several of whose works allusion has lately been made in this *Review*.* Sir Matthew Hale's great work on "The Primitive Origination of Mankind, considered and examined according to the light of nature," is devoted to the examination of subjects, such as the unity of the species, which have peculiarly of late years occupied the attention of anthropologists. Jacob Behmen, too, whom even Newton delighted to consult, must not be overlooked here. Among writers of this class, however, Des Cartes† and Malebranche deserve especially to be mentioned, as also our own writers Hobbes and Locke. In conjunction with the efforts of travellers and naturalists, the observations upon man in general, more especially as regards his intellectual and moral nature, form a mine of wealth to the anthropologist, which has yet to be explored, and to be worked as well. Among the French writers the President Montesquieu, and of his works his "Spirit of Laws," deserve especial notice. All his legal principles may be said to be based on anthropology, which is, indeed, more or less the case with the greatest and most profound jurisprudential writers, especially Puffendorf and Burlamaqui, thereby at once affording direct proof of the practical value of anthropology to legislators and jurists.

The second section of the chapter now before us contains an account of the formation of different anthropological societies. Speaking of the constitution of that at Paris, he observes:—

* Nos. 23, 24, 25, *On the Localisation of the Functions of the Brain, etc.*

† During a recent visit to Paris, we paid a visit to the church of St. Germain des Prés, the resting-place of the remains of Des Cartes, which is situated near the Institut; and learned with equal surprise and regret that no memorial of any kind whatever—not even a common slab-stone—has been placed to mark the spot where the ashes of this very great and original genius, who has done so much for philosophy in France, are laid. Surely, the Institut ought to do something to rescue from neglect so noble an ornament to the rank of philosophers in their enlightened country.

"Composed at first almost exclusively of medical men and naturalists, it has attracted to its ranks a very large number of travellers, linguists, historians, geographers, and archaeologists. If it has to complain of anything, it is that the men who cultivate these different sciences have not replied in sufficiently great numbers to its appeal ; for the more it advances the more it perceives that to study the science thoroughly a man requires to know everything" (p. 46).

Among the societies out of France, he alludes to those of London and Manchester, as also to that at Madrid, which has been for some time nearly defunct, owing to the jealousy and arbitrary interference of the then ruling powers ; while those ruling powers, in their turn, have shared the same fate, and have now as little influence over Spain as is possessed by the Madrid Anthropological Society.—*Sic transit gloria mundi.*

As regards the mode of studying men, our author remarks truly and philosophically :—"Man, as a problem not being understood, and consequently not being able to render us any solution of it, it becomes necessary to inquire among the plants and animals, to investigate the general laws common to all living beings, and to employ them in the solution of the question" (p. 60). This is an enlarged and comprehensive, as well as truly philosophical mode of following up the study of anthropology ; but an important light may be thrown on the nature of man by the observation, not only of beasts and birds, but also of fishes and reptiles, and even of insects and vegetables. The question as to the influence of difference of sex in our own species may obtain extensive elucidation from the observation both of plants and insects. The habits of beasts and of birds will serve also to illustrate many perplexing mooted questions in morals.

In the opening chapter of the second part of this treatise, "man's place among living beings" is discussed at large. It is here remarked that—"In reality man is the only being in whom one meets with the following essential characteristics : 1, the notion of moral good and evil ; 2, the belief in another life ; 3, the belief in beings who are superior to him" (p. 76). On the latter point he, however, subsequently remarks that "in this respect domestic animals are religious, for they readily obey those who influence them with the rod and with sugar" (p. 85). They also render homage to a superior being in the case of man. Indeed, he afterwards observes that "there is no difference between the Negro who worships a dangerous animal, and the dog who crouches at his master's feet to obtain pardon for a fault" (p. 86). And, as he also remarks in another part, "animals fly to man for protection, as a believing being does to his God" (p. 87).

Chapter ii is devoted to the much vexed question, even among anthropologists, of "the unity of the human species." He here re-

marks that "in France, as in other countries, anthropologists are divided into two parties upon a question essentially fundamental, for upon the solution of it arrived at depends very often the mode in which all the others are to be dealt with" (p. 94). He here, however, assumes, somewhat unfairly and unreasonably, as it appears to us, that the dogma of the unity of the species has the direct and positive support of the Bible, the incorrectness of which was pointed out in an article in this *Review** by one of our contributors some time ago, and into which it is, therefore, unnecessary here to enter. Professor de Quatrefages consequently speaks very incorrectly, of the unity of the species as "a dogma supported on the authority of a book which Christians, Jews, and Mussulmans almost equally respect" (p. 95), and as having been for a long time received without dispute; of which, too, as has been several times shewn, there is at least very great doubt. He then proceeds to observe,—"Peyrere, supported principally by the first chapters of Genesis, endeavours to demonstrate that Adam and Eve were the ancestors only of the Jewish nation; that they had been preceded by other men; that the Preadamites, ancestors of all the Gentiles, were created at the same time with the animals, and upon all parts of the habitable world" (p. 95). After that he goes on at considerable length to contend for the monogeneity of our race, although he is liberal enough to remark that "the polygenists are too often accused of impiety. One forgets that the same reproach has been cast upon many other doctrines which are at this day admitted by the firmest believers" (p. 96). He subsequently refers (p. 100) to animals and plants in order to solve the problem. And he afterwards observes, that while "there is a unity of species, the different races are fractions of the unity; or, again, the species is the trunk of the tree, while the races represent the principal branches, the boughs, and the twigs" (pp. 106, 107). In another part he asserts that "a rigorous comparison places it beyond doubt that with man the limits of variation of character are in all respects less extensive than with certain races of animals of one particular kind" (p. 110). And he subsequently informs us that "at the end of so many generations one is obliged entirely to recommence the series of crossings, because the products return to the primitive species, as is the case with vegetables" (p. 122).

"The formation of vegetable and animal races; hereditary and medium (*milieu*); applications to man;" is the title of chapter iii. He remarks here that "man does not himself exercise the selection which he employs in the case of the domestic species; and this explains in part how it is that we have found in his case that the limits of variety are always more restrained than they are with animals. . . .

* Vide *Anthrop. Review* for April, 1867, No. 17, p. 175.

It is not, therefore, surprising that there is nothing between man and man of the distance which separates so many of the races of the animal world" (pp. 139, 140). In another part he inquires—"What is degenerating, unless it be the transformation of one race into another?" (p. 141). In a subsequent page he thus defines the somewhat doubtful and perplexing term of what he terms the medium (*le milieu*):—"With me the medium comprehends the sum total of all the conditions of the empire, where either plant, animal, or man establishes itself, and advances itself to the state of germ, of embryo, youth, and adult" (p. 143). To some, possibly, the definition may appear more perfectly perplexing than even the term itself, and, instead of dissipating, may serve only to complete the obscurity. We believe, however, that, on the whole, it entirely meets the author's meaning; and that no other description could so completely comprehend the condition in question; the perfect accomplishment of which is necessarily a task of great difficulty.

On the general subject of the pursuit of anthropology, and the enlarged and comprehensive mode in which our studies ought to be followed, Professor de Quatrefages admirably remarks that "we can, and we ought to study the history of cultivated vegetables, and of domestic animals, to throw light on our own history. . . . Our orchards, our kitchen gardens, our stables, are the proper laboratories where we should work upon these organised beings, instead of confining ourselves to the materials afforded by the brute creation" (p. 144). He subsequently refers to the great variety in the races of dogs, as illustrative of that in the human species. The study of vegetables he shows to be also very useful in this way.

Chapter iv is entitled—"The primitive cantonment of the human species—the centre of the human creation." On the subject of this chapter our author observes that "certain facts allow us to conjecture with very great probability, that the centre of the creation of man will be found mainly in Asia, not far from the region at this day occupied by the central part of the structure. Indeed, round about this structure, or upon its flanks, we find the three fundamental types of humanity reunited by their intermediate portions, whether by the fusion of races one with another, or by the primary and very extensive modifications effected by the medium. Round about the same structure are distributed very different languages in vogue at the same time, and representing the three grand linguistic divisions universally admitted" (p. 171).

"The antiquity of the human species" and "fossil man" forms the subject of chapter v. "The peopling of the globe" and "migrations" that of chapter vi. "Acclimatisation" that of chapter vii. And in the eighth

chapter is considered "the origin of man ; man primitive ; man fossil ; the first European originators." Commenting here on the difference between men and monkeys, he remarks,—"The first is a walking animal, and walks upon its hinder members. All the monkeys are climbing animals" (p. 244). This is, however, hardly to be considered as an essential difference in itself, although it may be the result of a difference in their respective constitutions. A difference in habits and manners does not of itself prove a difference in man ; although it proves that their pursuits or their constitutions may have been different, which eventually led to their being different in the former respect.

The third part of Professor de Quatrefages's valuable and comprehensive work treats upon "the general character of the human race." He here observes that, "however incomplete is our actual knowledge, it embraces, nevertheless, nearly the whole of humanity, more or less the most essential groups, and the great majority of the secondary groups. . . . In order to enable the anthropologist to form a correct idea of the nature and the importance of physical peculiarities, and of those which are intellectual or moral, characteristic of the human groups," what we know of the human race is sufficient to qualify us for the pursuit (p. 275). Chapter i of the present part treats on "physical characters." On the subject of "proportions" he remarks that "in all our domestic races, the relative proportions of different regions of the body supply important characters. It is the same with man" (p. 281). On the subject of colour he observes—"With all the anthropologists . . . I attach great importance to the colour of the skin, the eyes, the hair, etc." (p. 284). The eye generally, its vivacity, its brilliancy, its mode of action, doubtless affords a marked indication of character of each kind, physical, intellectual, and moral ; but it may surely be doubted much whether its mere colour is sufficient for this purpose, being dependent on the general complexion of the rest of the frame, which is not certainly indicative in this respect. Indeed, he afterwards states that "the colour of the eyes is not of the same importance as the colour of the skin" (p. 288). But, as we have already hinted, is not the colour of the eyes mainly, if not wholly, dependent on that of the skin ?

In a subsequent part of the present chapter he remarks,—"One is led to ask whether smell (*odeur*) can be a characteristic of race. . . . The senses of savages, more exercised than ours, extend further. They can distinguish smells as we distinguish colours" (pp. 290, 291). On the subject of the trunk and the extremities, he observes that "among the well-to-do and intelligent classes of society, the body is sacrificed to the spirit ; among the necessitous classes it is often sacrificed to industry, and too often to vices, when civilisation alike favours

their development, and affords them the means of gratifying them" (p. 294). He subsequently refers, on the authority of Gratiolet, to "the intellectual youth (*jeunesse intellectuelle*), so remarkable among men who have constantly exercised their minds" (p. 302). We are not quite clear here, however, as to the precise meaning of our author. Does he intend to assert that in old age the mind of cultivated men appears young and vigorous, and in a peculiar degree to retain its force and clearness? Or does he mean us to suppose that the youths of a cultivated race display a degree of intelligence beyond the children of persons not highly educated? These are questions of deep interest to the anthropologist, and of considerable importance to mankind at large, on which we do not now wish to offer an opinion, but hope on some future occasion to see them fully discussed and fairly disposed of.

A fact somewhat damaging to the theories of our friends the phrenologists, and which we commend to their serious attention, is thus stated by our author:—"The brain is not alone in the cerebral case, but it is there with all its coverings (*envelopes*). Now it seems to me but little probable that they should always be of the same thickness, always steeped in an equal amount of liquid, and that the cavities (*sinus*) shall have the same dimensions, etc. On these different points, as upon all others, it is necessary that differences should exist, perhaps considerable, between one individual and another, and very probably also between race and race. No one has as yet made any precise research with the object of ascertaining these differences, and of determining their importance (*valeur*). In the meantime it is evident what this influence is upon the volume of the regions of the brain (*l'encephale*)" (p. 303). It surely, however, would not be difficult, while it is at the same time very important, to ascertain these differences. Experiments for the purpose might be made upon the heads of animals as well as those of men. We may venture to infer, however, that the average difference would be much the same in different heads, so that in the great majority of instances,—in all where some peculiarity does not intervene to cause a variation,—the shape of the skull will be found pretty correctly indicative of that of the brain.

Professor de Quatrefages, however, informs us that "Gratiolet concludes that the development of the skull is, up to a certain point, independent of that of the brain, and that different parts of the region of the brain (*l'encephale*) develop themselves also, up to a certain point, independent of each other" (p. 304). But admitting all this, each part must ultimately attain its full growth and development, and so all these different parts will probably find their proper level at last.

[*To be continued.*]

DR. WISE ON RACE IN MEDICINE.*

THE work before us affords a mine of matter interesting to the student of the history of medicine, and in the portion of it relating to the origin and progress of medicine among the Hindus, we find traced out the germs of ideas which were subsequent, appropriated, and developed by the great men who were the fathers of European medicine. A large proportion of the most ardent wolers of anthropology are found among the professors and practitioners of medicine, but it is not from their point of view that we propose to review this book ; and we shall here only say, with respect to its general merits, that the untiring industry and well-known and various learning of Dr. Wise are everywhere conspicuous therein.

But these two volumes, which deal with the history of medicine among the Hindus and other Asiatics, furnish many facts for the consideration of the anthropologist, which are almost wholly disconnected from the region of medicine. Take, for example, the following passage from the introduction :—

“ The cultivation of the mind improves the character of a people ; and the difference is marked between the ancient and modern Hindu family of Aryan physicians, educated during many generations, and the barber-surgeons of the Turanian race, without any education. As the subject was important, I selected an educated Vaidya physician, and a barber-surgeon, quite uneducated, from among my assistants when in India, in order to examine the difference. The former, who was named Neem Chaund Doss Gupta, belonged to one of the four Vaidya classes, which Bullal-Sen, the great Vaidya king, instituted. His family had been for many generations the chief physicians of the province he inhabited ; and, in his authenticated family history, it is stated that they have been from time immemorial distinguished as physicians. For fourteen generations particulars of each succeeding individual are given, which, allowing only twenty-three years for the length of each life, would carry back the history of the family for a period of more than three hundred years, to about the time of Telenga Mukund Deb, the last able and independent king of Orissa. After a brave resistance, that monarch was conquered by the Mussulmans, and the distinguished men he had employed about his court were dispersed. It was at this time that Narayan Doss Gupta distinguished himself by his learning, etc., etc. . . . His son, and seven of his successors, supported a gratuitous Sanskrit school, in which the medical shasters were taught. . . . The thirteenth was physician to Rajah Roybullah. . . . His son, Neem Chaund Doss, was my friend, the fourteenth of

* *History of Medicine*, by Thomas A. Wise, M.D., etc., etc., vols. i and ii. London : Churchill.

this honourable list. In order to study the English system of medicine, he attended regularly the Dacca Dispensary and Hospital, and there he attracted my notice by his diligence and attention, and by his great intelligence and industry. I procured for him a situation under Government, with a small salary sufficient for his humble wants, and modest and retiring habits. He had an accurate and extensive knowledge of the medical shastres, a great part of which he knew by heart ; and quickly distinguished himself in practice, by his activity and correctness, and by the judgment he displayed in the treatment of disease.

“To mark the effect of the pursuit of learning, during so many generations, and of the want of education, on the physical organisation of the Asiatic, I sketched the profiles of two medical men. Fig. 1 is the profile of Neem Chaund, and forms a striking contrast to No. 2, the profile of a barber-surgeon, who was born of low-caste parents, that had for generations received no education, and got their living by shaving, cleaning the ears, trimming the nails, inoculating the small-pox, performing phlebotomy, extracting teeth, and assisting at certain Pagan ceremonies, as that of fixing the hooks in the flesh of those who swing round on a pole at the Ratgatra. I had frequent opportunities of observing the character of this individual. He was ignorant and superstitious, but kind, affectionate, and methodical, with a good deal of cunning. Such a low branch of the healing art is not connected with any caste, rank, or religion. Still, there are individuals among them (the barber-surgeons) who acquire much expertness in such a calling. They seem to transmit a degree of manual expertness to their descendants, who sometimes distinguish themselves as lithotomists, oculists, etc.”

It should be here remarked that the Vaidya or Ambastha caste, to which the physician above described, Neem Chaund Doss Gupta, belonged, is alleged by the Hindus to have sprung from the marriage of a Brahmin with a Vaishya, the Vaishyas ranking as the third caste, and being, or claiming to be, Aryan. Whatever amount of credit we may give to such a genealogy, it indicates the opinion of the Hindus that the physician caste sprang from among the gifted invading race, not from among the indigenous or previous occupants of the land.

It may be gathered from the passages quoted above, that Dr. Wise entertains decided views as to the importance of hereditary influence in the transmission of mental and moral qualities. Accordingly, he visits the caste system with less reprobation than it usually meets with from Europeans. “The institution of caste,” he says, “at first accelerated the advancement of knowledge, by accumulating the experience of generations, enabling them to acquire a degree of hereditary aptitude and manual expertness, and develope an extent of ingenuity, that has scarcely been equalled in Europe.” Subsequently, he allows, the very system which had produced this rapid development served only to petrify and arrest it.

The two heads figured by Dr. Wise give us the impression of belonging to men differing in race, taking the word in an extended sense. The physician has a head of what we commonly call the Caucasian or Indo-European type, with well-developed forehead and moderately prominent occiput, while the head of the barber-surgeon is globular or pyramidal, short, with sloping forehead and deficiency in the occipitoparietal region, resembling in type the heads of many of the races called Turanian, or of the peasantry in some parts of Italy. We have observed this latter type in the person of a gentleman of much intelligence and education, who belongs to the Kastha or writer caste, who, though they hold a very respectable position, and have for many generations been educated men, are acknowledged to be Sudras, *i.e.* of indigenous blood, and whose physical type has not been elevated by Aryan admixture.

PENGELLY ON THE ARCHAIC ANTHROPOLOGY OF THE SOUTH-WEST OF ENGLAND.

AMONG the difficult and, as yet, unsolved questions of the day, few excite a greater interest than the antiquity of mankind. The Anthropological Society of London was established partly for the purpose of investigating this abstruse subject, and of collecting into one focus the scattered data on which the science of man must be raised. The facts and deductions are of only recent discovery, and are still in process of accumulation. It has long been incomprehensible to scientific inquirers that the short period of a few thousand years can have completed the rise and progress of man, with all his varieties of race and language. Variations of race take place so slowly and imperceptibly that ages must pass before a clearly defined distinction can be recognised. In appealing to history for information on the origin of the Negro or the Red Indian, we find that all is blank, obscure, and uncertain. If we go back to tradition, mere ridiculous fable and allegory take the place of facts; but when history and tradition are silent, archaic anthropology steps in to assist us, and we are enabled to learn something of the habits of the early races by the implements they have left behind in the strata in which they have been imbedded.

The gravel beds and bone caverns of England and France have afforded us the most ancient traces of man yet discovered. Professor

Worsaae and the Scandinavian antiquaries have divided into three epochs the prehistoric period. The earliest has been called the stone age, the long period of primitive barbarism: the first effort of human reason in self-defence was accomplished; a feat which none of the inferior animals has been able to accomplish. There is, however, a difference of skill displayed by the earlier and later workers in flint and stone. Then followed the use of bronze weapons, and these again the use of iron, and thus an iron and a bronze age form epochs of characteristic importance in the history of man. The flint folk seem to have been contemporary with the mammoth (*Elephas primigenius*), woolly rhinoceros (*R. tichorhinus*), and other species of mammalia now extinct. The records they have left behind in numerous localities in Europe prove their extensive range over a wide area. Boucher de Perthes traced their reliquiae on the banks of the Somme, when the river flowed at a much higher level than at present. Mr. Prestwich has ably confirmed and extended the views of the French geologist. Throughout the whole area hitherto examined, the same type of flint implements, tools, and weapons prevails. In the splinter of flint the early savage found his best cutting instrument; chipped to a point it formed a boring tool; flaked into oval or leaf-shaped forms it formed spear or arrow-heads; larger masses were used as missiles, or as battle-axes useful and formidable either in the chase or in war. Probably the act of chipping the flint with some hard ore of iron brought the flint folk to the discovery of fire: the Esquimaux and the Lapps still adopt this primitive method of obtaining fire. At all events, the ashes found at Wookey Hole, and at the mouth of the cave of Aurignac prove that fire was not unknown at the early period of their inhabitation. The process of smelting must have preceded the age of bronze, and long previous to the discovery of this art must some such easy process of obtaining fire have been known.

M. Lartet examined the contents of the cave of Aurignac in 1860; but in 1858 the systematic exploration of the Brixham cavern was made by Mr. Prestwich, Mr. Pengelly, and others; and this, as Sir Charles Lyell has remarked, "prepared the way for the general admission that scepticism, in regard to the bearing of cave evidence in favour of the antiquity of man, had previously been pushed to an extreme."

This essay of Mr. Pengelly, reprinted from the *Transactions* of the Devonshire Association for the Advancement of Science, Literature, and Art, throws some light on the changes which must have taken place in the relative adjustments of land and sea since the Brixham cavern received its deposits. On the floor of this cavern the flint tools of man and the bones of extinct quadrupeds were found in close

juxtaposition. If this deposit be rightly interpreted, the evidence is overwhelming that the extinct mammalia must have been contemporary with the existence of man, and preceded the age of that submarine forest, which covers a large portion of the bottom of Torbay, having been traced as far from the shore as the five-fathom line. It probably reached its present level by a gentle and gradual subsidence, for the trunks and roots of trees remain *in situ*. Long before the growth of that forest, which once crowned the surface of that inlet of the British Channel which now forms Torbay, man must have existed. But before we can form any idea of an answer to the question, how long? we must approximate our conceptions of time to some definite idea as to when Torbay was formed by the subsidence of the land on which that forest grew. The sea, however, is not the only covering of this ancient forest, for in the mining districts of Cornwall the workmen have penetrated through thick accumulations of material until they have reached these vegetable remains extending very far inland. And in this deposit at a depth of forty and fifty-five feet human skulls have been found at Gentman and Carnon;* also, at the former locality, a piece of oak which the hand of man had shaped, at the depth of forty-four feet. Who can estimate the remoteness of that period when these skulls were entombed? But a more remote period still must be that in which the remains of the Brixham cavern were deposited by the action of a mountain torrent. In reference to these questions, Mr. Pengelly observes:—

“ Though the time required for and represented by the foregoing changes must have been great, it failed to fill the interval between the present day and the earliest traces of man in Devonshire. The submergence of the forests was not the thing of yesterday. In order to a determination of the antiquity of man in south-western England, to the time already demanded must be added that which has elapsed since the last adjustment of the relative level of sea and land” (p. 3).

This interesting question receives a large share of consideration in this pamphlet, indeed it is principally devoted to the history, legends and traditions of St. Michael’s Mount, which archæologists may safely identify with the Ictis of Diodorus Siculus; and yet nineteen centuries have passed away since that description of the Greek historian was written, and no appreciable change has taken place between the physical relations of the island and the mainland. We shall not, however, follow Mr. Pengelly into these historical and traditional matters, interesting and valuable as they are, as they throw but little light over the more strictly anthropological subjects, which the study of the Brixham cavern and its deposits brings before us for our con-

* One of these skulls is in the Geological Museum at Penzance. It is very desirable to have a detailed description of it.

temptation ; but we recommend them to the attention of archaeologists. The author sums up his statement thus :—

“ . . . Since the era of that tranquil, uniform, and general subsidence, which resulted in the submergence of the forests, whose remains are found on the strands of all the British seas and channels, thick accumulations have been lodged in the valleys or the forest ground, and broad foreshores have been formed by the retreat of the cliffs before the waves, yet, at least, nineteen centuries have failed to produce an appreciable change in the character of the mount, or its relation to the mainland ; prior to this subsidence was the period of the forest growth, when the mount was unquestionably a ‘ hoar rock in a wood,’ but which, in all probability, it had ceased to be very long before any language now known to philologists was spoken in the district ; before this again was the period of the deposition of the blue clay and of the tin-ground, in which the forests grew ; earlier still was the epoch of the excavation, or re-excavation of the valleys, in whose boundary hills are the caverns of South Devon ; and in a still more remote antiquity, when the bottoms of the valleys were, at least, one hundred feet above their present levels, persistent streams or fitful land-floods carried the characteristic red loam into these caverns. Great as is the age of these deposits of cave-earth, it does not exceed the antiquity of man in the south-west of England.”

THE ORIGIN OF THE GAULS.*

THE appearance of M. de Belloguet's work calls somewhat painfully to mind the fact that anthropological studies are regarded with far more favour in France than in England. M. Amédée Thierry's *Histoire des Gaulois* has already attained a sixth edition. The volume before us is the third part of a work which can already boast a second edition of its first part, and that first presents no more attractive title than *Glossaire Gaulois*. The writings of Dr. Broca and M. Pouchet are probably better known in France than those of any English anthropologist in England. And, though some English anthropological publications exist of which Englishmen may be proud, it would be difficult to point out one of which the first edition has been fairly sold out.

To us, therefore, on this side of the channel it seems somewhat strange when a Frenchman complains of the difficulty with which new and more correct views are adopted. M. Belloguet laments that

* *Ethnogénie Gauloise*, par Roget Bon. de Belloguet. *Troisième partie,—*
“ *Le Génie Gaulois.*”

proofs drawn from history and from science are ignored in the latest editions of popular works, and plagiarist after plagiarist repeats the errors of his predecessors. His indignation is excited because M. Amédée Thierry still recognises a distinction between the Gael and the Cymry. What would he say if he lived in England and saw a work (brought out under the auspices of Oxford University) of which the first volume reiterates again and again, in defiance of historical criticism and physical facts, the astounding statement that Englishmen are Dutchmen?

In France matters are certainly better understood, because they have been longer and more carefully studied. Although the French are separated from the Germans by no more formidable barrier than the Rhine, Frenchmen of all ranks are quite satisfied that they are not of Teutonic origin. Though Britain is separated from Germany by the sea, there are still many Englishmen who believe that a few marauders from Jutland and Holstein have sufficed to people nearly the whole of Great Britain. So far as names are concerned, France and England are on the same footing, for each has adopted the name of a German tribe. In England, however, littérateurs and historians have fallen down and worshipped the word as a god; and only scientific inquirers are at present convinced that the word is in no degree an indication of the fact. In France, on the contrary, common sense, if not a more diffused knowledge of science, has impressed upon the national mind the conviction that great races are not annihilated by invasion. In spite of his name, and in spite of his language, the Frenchman never dreams that he is either a Roman or a Frank. He admits that both the Romans and the Franks have had an influence upon his history, but he prides himself on being what he knows that is, a Gaul by descent.

The application of anthropology to minor race problems affecting the inhabitants of France is thus rendered far easier than its application to similar problems in England. Here we still have to struggle for the establishment of first principles; there first principles, which have received the sanction of anthropologists, are firmly implanted in the public mind; and while we are labouring (not without success, it is true) to prove that if race means anything it means radical distinction between Germans and Englishmen, our French friends can limit their inquiries to the constitution of that Gallic nation which Cæsar subdued.

M. de Belloguet entertains, or rather appears at first sight to entertain, an opinion wholly different from those of Messrs. A. Thierry, Edwards, and Broca, concerning the signification of the term Celt. He regards the true Celts or Gauls as a race spread at various times over

a very wide area—from the British Isles to the mouths of the Danube—and characterised everywhere by “a milk-white skin, a lofty stature, a long face, and very fair hair.” He repudiates the distinction commonly drawn between the Gael and the Cymry, and admits only one Celtic people, which, according to his view, subjugated a round-headed brown race, previously master of Gaul, by whom the Celts were, to a great extent, absorbed. All who are acquainted with the writings of Dr. Broca, the great master of French anthropology, will remember that to this short-headed brown race, which still survives almost pure in Auvergne, he gives the name of Celts as distinguished from the tall long-headed and somewhat fair-haired race whom he distinguishes by the name Cymry. So far as the Cymry are concerned, he agrees with M. Amédée Thierry and M. Edwards, from whom, however, he differs in making Celt a term of special, instead of generic, meaning. And it is not too much to say that all these unfortunate differences have arisen from the old-fashioned and pernicious theory that language and race are always cōextensive. The war is a war, not of facts, but of words.

It is quite possible that M. de Belloguet, M. Thierry, M. Edwards, and Dr. Broca may all be perfectly right—much as they seem to differ from each other. M. de Belloguet, as we understand him, asserts that the long-headed race, which he says was fair-haired, spoke a Celtic dialect; the other authors do not dispute the position. M. Thierry, discovering certain marked differences between the High and the Low Celtic dialects, assumes a corresponding difference of race; but even M. de Belloguet cannot deny that the linguistic differences exist. M. Edwards does but draw the distinction between the long-headed and the short-headed races; and M. de Belloguet admits the distinction, though he cannot agree with M. Thierry’s nomenclature. Dr. Broca boldly denies the value of philology in questions of race, gives an arbitrary definition to his terms, and when given maintains it consistently; but his facts agree with the facts of the other three authors. It appears from all this, that an international anthropological congress is very much needed to settle with authority the sense in which ethnic and other terms should be used. There is great waste of valuable force in these disputes which might be rendered impossible by common consent.

A man must be very bigoted who would refuse to abandon his own definition, however correct in his opinion, for the sake of uniformity; and until some definite understanding has been arrived at, each author who does not wish to fall behind the age would do well to define his own terms. It may be that the words Cymry, Celt, Gael, etc., will have to be abandoned one day by scientific anthropologists, and will become the mere playthings of third-rate anthropological philologists;

it will probably be found impossible in practice to disconnect the terms from some of their old associations. They must always be used to distinguish languages, and their use in anthropology will, therefore, always have a tendency to confuse language with race. Should M. de Belloguet's work have the effect of producing such a change, he will have been a very great benefactor to science.

So far as the leading facts are concerned, it does not appear that M. de Belloguet has brought to light very much that was not previously known to English anthropologists. M. de Belloguet's great point, however, is that the short-headed race which forms the chief constituent element in the Gallic nation, is to be identified with the Ligures of classical writers, with the "Lloegrwys" of the Welsh triads, and with the Gwyddil, Gaedhail, or Gaels. "We claim," he says, "the honour of having first presented them to the world of *savans* as the true root of our genealogical tree, by distinguishing them from the Iberians, with whom the ancients had confounded them, and who are, like the Celts, grafted in the west, on their prehistoric trunk." This Ligurian people M. de Belloguet believes to have been sober, accustomed to labour, well able to bear fatigue and privations, warlike, and remarkable for their courage. They were accused of perfidy and cruelty; but their two best marked characteristics were cunning and an indomitable obstinacy. They were at all times avaricious, and in war eager for pillage. They possessed quickness of perception, great natural eloquence, a keen sense of the ridiculous, a restless spirit of inquiry, and the faculties of invention and imitation. On the other hand, they were wanting, says M. de Belloguet, in "the religious sense," though, according to Cæsar, the whole of the Gauls were plunged in the most revolting superstitions.

This description naturally excites the inquiry—how is it possible to distinguish the character of the Ligurians from that of the dominant caste, the Gauls, if such a caste ever existed? A strict application of the principles of historical criticism compels us to pause before accepting M. de Belloguet's picture as an authentic portrait, though the same principle forbids us to assert that the portrait may not be correct. The truth is, that there is but little historical material in the writings of the Greeks and Romans, by means of which it is possible to draw even an outline of the character of any very ancient people considered as a whole, except, of course, of the Greeks and Romans themselves. And there is still less material for an analysis of the psychical characteristics of the component elements of any very ancient people. In the present case an attempt has been made to distinguish the Ligurians from the Gauls proper upon the most slender possible evidence. A few vague allusions from some of the poets, the notes of a commentator,

and the superficial remarks of one or two travellers may be given as the catalogue of authorities upon which the author relies, and which certainly appears to be quite insufficient for his purpose.

It would, however, be unjust to M. Belloguet to represent him as insensible to the difficulties which beset him on every side from want of materials. He is perfectly aware of the delicacy of his task, and endeavours to strengthen his position by those "considerations of general ethnology," which he has stated in the previous parts of his work. And he believes that the contradictions of various ancient writers upon the manners and customs of the Gauls considered as a nation are only to be explained by his hypothesis concerning the two component elements. Having assigned certain mental and moral qualities to the Ligurians, he assigns certain others to the Gauls proper according to his nomenclature—to the conquering race. The latter, though remarkable for beauty of form and feature, were, in his opinion, characterised by a fierce and impetuous love of action, by the want of reflection and fiery energy of the brute, by intemperance, and by a passion for ornament—qualities hardly redeemed by a certain simplicity and frankness, by credulity, and by a magnificent hospitality. It would require more proof than M. de Belloguet can adduce to convince the majority of men that nearly all the worst mental manifestations were exhibited by the race of better *physique* and nearly all the best manifestations by the race of worse *physique*.

All attempts to distinguish races by their psychical characteristics are dangerous even when the evidence appears to be ample and the differences well marked. There is a great tendency in this, as in many other subjects, to mistake words of little or of ambiguous meaning for facts of great importance. Take, for instance, such terms as "quickness of perception," "warlike disposition," "sense of religion," and consider what they may imply, according to the different views of different persons. They may mean almost anything, or next to nothing. Quickness of perception may be applied to a woman's eye for her neighbour's dress, or a man's generalisation of scientific facts. The definition of a warlike disposition must of necessity differ with the age which is under consideration, and the point of view from which it is regarded. The "religious sense" is, perhaps, the most unfortunate term which could be chosen for the discrimination of races. From different points of view it would be possible to maintain that any nation possesses a religious sense, or that any nation is without it. To the bigot nothing is a religious sense except that kind of sense which causes other men to think as he thinks himself. To the student of religion in general—of the sum of the religious manifestations in the world—there appears to be, if not a religious sense (which is too vague

an expression for scientific use), at least a common element of mind which causes human beings, however differently constituted in other respects, to accept a religious belief of some kind or other.

It appears without doubt, at first sight, to be a matter of little difficulty to describe the mental characteristics of any nation, or at least their salient features. But this is a branch of study, which, if it can be safely undertaken by anyone, can be safely undertaken only by a psychologist; and psychology is by no means the easiest of the sciences. Popular language may be very useful for an appeal to popular feelings, but scientific accuracy is not to be attained without the use of technical terms. Nothing is added to our knowledge when the character of a nation, or even of an individual, is given by a string of ambiguous adjectives. That kind of methodless ethnographical psychology is fit only for the Calibans of literature or the Plagiaries of science; and it is not desirable in the interests of anthropology, that the scientific world should be peopled either with Plagiaries or with Calibans.

Either ignorance or a deliberate disregard of admitted psychological laws would be excusable only if greater precision could be attained by the adoption of some new method. The discovery of the laws of association which have now been recognised by psychologists of every school, the works of Professor Bain, of Mr. Herbert Spencer, of Mr. G. H. Lewes, and of Professor Masson, have not been thought worthy of notice by M. de Belloguet, nor is there any trace of scientific method in *Le Génie Gaulois*. Psychology there is; but it is the psychology of the littérateur, not of the psychologist.

This literary superficial mode of treating mental phenomena throws over every proposition a haze which is not to be penetrated by the scientific eye. Thus, we not only have descriptions of character which would be almost equally applicable to a modern Eskimo and an ancient Greek, but we have endless repetitions in various forms of the old-fashioned jargon concerning the recognition of "A Higher Power." In one place we are told that a tribe is wanting in "the religious sense;" in another that "a sentiment, more or less instinctive, led the first Aryans to recognise above their heads a Supreme Author of all things, a general and omnipotent principle of existence." It would, perhaps, be impossible to invent a sentence which would more obviously display the absence of all psychological training than that which has just been quoted. Where could anyone hope to discover a more exquisite contrast than that which exists between the extreme vagueness of the "general omnipotent principle of existence," and the extreme precision with which the "general principle" has its place assigned "above the heads" of the first Aryans? Whatever may be the

true definition of instinct, it is quite certain that the instinct of brutes would be of very little use to them, did it not enable them to discover facts very much more definite than general and omnipotent principles.

But all this comes of attaching too much importance to words. It is only what might be expected of an author who announces that the language of the Celts "proves" their eastern origin. It is the fault not of intellect but of a mischievous training in old-fashioned prejudices. Though we have not spoken in terms of very high praise concerning the third volume of M. de Belloguet's work, we nevertheless entertain a high respect for M. de Belloguet himself. His faults are the faults of the pernicious literary system which he has adopted, or in which he has been reared; but his merits are all his own. He is credulous in historical matters, he is blindly partial to the philological school of ethnology, but he is a man of rare erudition, and when he does not start with a foregone conclusion he shows powers of criticism and of combination which might have rendered his book a masterpiece.

He is well acquainted with the works of Adalbert Kuhn, and of Max Müller, and he criticises, while he adopts, some of their views on comparative mythology. Here again, it is true, appears the man of letters rather than the man of science, but still it is the man of letters of first rank; and that is always his position except where he travels beyond his sphere. Comparative mythology belongs at present to the domain of Belles Lettres rather than to that of science, and the discovery that M. de Belloguet has given great attention to it excites no surprise. He attempts to apply some of the principles of comparative mythology to the religion of the Druids. But, inasmuch as both the Druids and comparative mythology are very large subjects, we are quite unable to discuss them in a review which has already grown to a considerable length. We have only to remark, that we fear less is known about the Druids from trustworthy sources than M. de Belloguet supposes, but that, in spite of all its faults, his work is very interesting and even valuable by reason of the mass of facts which he has brought together.

OWEN'S COMPARATIVE ANATOMY OF VERTEBRATES,
VOL. III.*

THE publication of the third and concluding portion of Prof. Owen's great anatomical work is unquestionably an event which marks an era in anthropological science. We have already laid before our readers our observations on the two earlier volumes, and we shall endeavour to point out the principal passages of the present volume which are of interest to anthropological students, as well as to the student of those higher biological problems, on the truth of which sound anthropology must depend.

The most important part of this third volume is unquestionably that in which Professor Owen "revendicates" for himself the honour of being for many years a staunch and consistent advocate of the origin of species by a slow process of derivation by secondary law. It has been too much the fashion amongst the pseudo-scientific men of the present day to represent Owen as a believer in the eternity of species, and to have been an advocate against transmutation, *i.e.* against the derivative law having operated in the production of living beings. He, however, so long ago as 1850 ("On Genus *Dinornis*," part iv, *Zool. Trans.*, vol. iv, p. 15), illustrated the operation of this law. He naturally met with opposition, and many of our readers will, no doubt, be surprised when they read the following passage, which was used by Professor Huxley in the year 1854.† We quote it at length:—

"The object he had in view was to point out the general arguments adduced by those theorists who contend that there has been a progressive development of life since the globe first became habitable, commencing with the simplest forms of organisation, and proceeding regularly upwards to the most complex, and then to show that such a view of creation is not compatible with the facts disclosed by geological researches. . . . Mr. Huxley entered minutely into the differences exhibited in those fishes and in salmon, with a view to show that the development of an expanded tail could be traced anterior to the single tail of cartilaginous fishes, and, therefore, that this point on which progressionists have placed so much reliance entirely failed them. In several other respects also the organic remains in the lower series of rocks exhibit a higher degree of development than appears in animals of the same class in subsequent periods. Thus, though a superficial

* *On the Anatomy of Vertebrates*, vol. iii. By Richard Owen, F.R.S., Superintendent of the Natural History Department of the British Museum, Foreign Associate of the Institute of France, etc. London: Longmans, 1868.

† Huxley *On Progressive Development of Life in time*. Royal Institution, 1855.

view of the successive classes of animal life may appear to sanction the opinions advocated in such works as the *Vestiges of Creation*, a more close examination dispels the notion of progressive development, and proves that it has no solid foundation."

When such opposition as this was led, not merely to "vestigism," but to any scheme of transmutation, or progressive development, it is not remarkable that a large proportion of our scientific men refrained from accepting the derivative theories of Owen. The publication of Darwin's work popularised a scheme of development which was as old as science. The principle of natural selection had little in it new, though much which was true, and had been previously demonstrated. The systems of Lamarck and the *Vestiges*, inaccurate though they may be, had a far more philosophical basis than modern Darwinism. To Lamarck especially is due our highest thanks, for having been the first to develope a theory of transmutation and progressive development, based on a semi-Lucretian foundation. Darwinism in 1869 has had already the test of nearly ten years' experience, and during that time has failed to acquire many more votaries than those which it acquired during the first few months of its existence. The reason of this is that it is merely a scheme, and not a *μεθοδος* : it is an hypothesis, not a theory, and, as such, will never be acceptable to strict scientific analysers. Fulsome adulators of Darwinism have compared his hypothesis with the Copernican theory : but there is really no higher scientific excellence in Darwinism than its sister sciences, mesmerism, phrenology, spiritualism, teetotalism, besique, or velocipedism ; and there is a correlation between these sciences which is often presented by the leading Darwinists. Some Darwinists are phrenologists ; some mesmerists ; whilst the chief leaders are spiritualists. The reason why these somewhat equivocal sciences are connected in the mind of the same individual may not appear manifest, and we can only account for the fact that Mr. Wallace, *e.g.* is an eminent Darwinist, and a still more eminent believer in spiritual manifestations, on the theory of accidental correlation, *e.g.* that blue-eyed cats are generally deaf, and that short-beaked pigeons have small feet.*

But there has been a cry raised that Professor Owen is not sufficiently frank, not sufficiently liberal, and that he is in fact a representative of "official" and cautious science. This charge is most unjust. It comes especially unjustly when it is applied to a man, who even in the moral and mental corruption produced in the present day by pampering to the imaginary desires of the lower classes, has never, so far as we know, degraded himself or prostituted science by giving series of lectures to "working men," and has endeavoured to preserve

* Darwin, *Origin of Species*, ed. 1861, p. 12.

science exact and truthful, whether or not it may be widely diffused. Yet it is suggested that the constant and habitual reticence which Professor Owen has always exercised proceeds from an indisposition to make public his thoughts, or to be on the unpopular side. We dissent entirely from these opinions. Nobody should proclaim anything to be true, or should teach, until his own mind is decidedly made up; and Owen, who has long advocated the derivative law, at a period prior to the publication of Darwin's work, should not be twitted with reluctance to express his conviction.

It is certainly according to our interpretation of the laws of criticism both severe and unmerited to put a commentary on words which, on the face of them, do not advocate a certain theory by reference to the author's known opinions. Bolgeni, in an analogous case, says "Il dire che in quei casi nuno ha diritto d'interrogare; che le parole significano secondo la convenzione comune fra gli uomini; e cose simili, che da alcuni autori si dicono per esimere da peccato la bugia in quei casi; questo è un attaccarsi a ragione frivole, e soggette a molte repliche quando si ha la ragione evidente della citata impossibilità" [*Il Possesso*, c. 48]. Professor Owen's style is usually so thoroughly exact, that careless critics may slip into many pitfalls, if they do not entirely master the habitual language in which our great master inculcates his methods of thought, and always, not merely tells the whole verity, but avoids the error by which the incautious teacher prætergresses the limits, not merely of necessary truth, but of absolute verity. Many of his reviewers, however, do not appreciate the merits of a style which

"Eluding, ne'er deludest,
Nor deceiv'st, nor art deceived,
But including, still excludest,
Fully known, yet not perceived."

His style is not sufficiently "frank," not sufficiently gushing for them. It will not do for "working men," except for those who admit that "Si autem jurans dolum non adhibeat, obligatur secundum intentionem jurantis." The fact is, people in the nineteenth century are so little accustomed to have actual truth told them, that they think it looks mediæval.

Professor Owen, however, can confidently appeal to future generations, when his work the *Anatomy of Vertebrates*, will be read with profit and instruction by thousands of future students. The small jets of fluid which little beings may discharge on the corners of mighty monuments seldom affect the period during which the architecture may be preserved. The eloquent words of Dr. Ingleby, in his recently published *Introduction to Metaphysic*, may be here applied with great profit. He says:—

"The few whose faculties and leisure have been devoted to the abstractions of philosophy will have little fruition from an incomunicable discovery, or from a success which they can only celebrate 'like children sitting in the market-place.' Nevertheless, the few who, undismayed by the certainty of neglect, have made philosophy a life-long labour . . . will assuredly not keep silence, though their words are doomed to perish speedily, or to contend painfully and slowly with an outer darkness far more hopeless than that of the tomb."*

We now turn to the more especially anthropological parts of the work, and the first passage we shall notice is that which refers to the complexion of the races of men, in which certainly Professor Owen details his theory at considerable length.

"In the human subject the amount and colour of the subcuticular pigmental cells relate, but not absolutely as regards existing continents and peoples, to the degree of solar influence to which the skin is exposed. A fair complexion and light hair do not characterise any race indigenous to tropical and warmer temperate latitudes, but are limited to cooler temperate and warm climes, which, from the present excess of dry land in that hemisphere, are northern or arctic. The continent of Europe, if the complexion of its people be compared from Scandinavia to the Mediterranean, exemplifies the progressive deepening of the tints of skin, hair, and eyes, as the sun exerts more power. But the Asiatic part of the old world shows this relation to a minor degree. The aborigines of Northern Asia to Kamtschatka are like the Japanese of a brownish-yellow complexion ; the same prevails through all the latitudes of the vast Chinese empire ; but the southern extensions of that people into Cochin China, Siam, and Burma, do show a deeper brown. The Hindoos retain the same almost black tint over a range of twenty-six degrees of latitude and twenty-four degrees of longitude ; but these are tropical, or nearly so. The Malays of the Indian Archipelago preserve the same deep brown tint over eighteen degrees of latitude, reckoned from the equator northward, and the tint would seem still to relate to such excess of solar influence ; although the sway of other causes is exemplified by the darker Minopies, Cingalese, and Hindoos, under similar influences. Still more strikingly is this shown by the blackness of the Melanian aborigines of New Guinea, Australia, and Tasmania, retained from the sixth to the forty-third degree of south latitude ; and especially of those of the outlying islands in proximity with others inhabited by the olive brown Polynesians, whose complexion prevails from lat. 12° south to 46° south (New Zealand). But the most instructive example of the chosen relationship of tint to race than to climate is afforded by the aborigines of the New World, which hold nearly the same depth of copper-brown or reddish tint, latitudinally from Tierra del Fuego to Hudson's Bay, and longitudinally from the Atlantic to the Pacific. The contrast between the South American Indians and the African Negro would seem to be decisive against the hypothesis of degrees of solar influence

* *Loc. cit.*, p. 206.

being the causes of degrees of darkness of complexion. But there is an element in the problem which ought to be taken into consideration, viz. *time*. If Africa be an older continent than South America, its aborigines may have been subjected to solar influences through a longer series of generations. We know not the extent of such series; some may deem that were the intertropical South American Indians subject to a vertical sun during the long ages of Africa's emersion, they would acquire a darker complexion. Climate, however, depends on other influences than sunshine. Degrees of moisture, and whatever influences cause a contrast or gradation of seasons, etc., may have their influences upon complexion. Filthy habits, foul air, and bad food affecting biliary and other secretions, have their share in darkening the skins or sallowing the complexions of the Esquimaux, Fins, and Laps, *e.g.* as compared with the cleaner and more healthily living and better nourished Scandinavians residing some degrees further from the pole. But assuming, as the general result of the above survey of human complexions, that such complexions do, in the main, show a certain dependent relationship on solar light and heat, and postulating the effect of long periods of such subjection, we might then be led to conclude the darkest of the intertropical and warm temperate peoples to be the oldest; that the Melanians, scattered on islands to the east of the Indian Ocean, inhabit relics of a continent, as old as, perhaps older than, Africa; and that the lighter-tinted races on intercalated or contiguous portions of dry land are subsequent immigrations or derivatives from lands less affected by solar influences. On this hypothesis it may be inferred that the deepest tinted races existing in the islands of the Malayan Archipelago are the oldest inhabitants of such—those most entitled to be termed aborigines. The Hindoos, by the same pigmental test, would be deemed older than the Parsee or Mohammedan natives of Hindostan, as history indeed testifies. In extratropical latitudes human generations may have succeeded each other for the same duration of time as in tropical ones, without further deepening or development of pigment than such diminishing influence of the sun may effect. Such peoples, migrating to tropical countries, may long maintain their inherited complexions; just as the black races migrating to extratropical latitudes long retain the tint inherited from forefathers in whom it has been established primarily by the requisite continuance of exposure to extreme solar heat and light" (p. 614-616, vol. iii).

The passages in Professor Owen's work which relate to the muscular system of man and the apes should be read with the greatest care, as they are conceived in a most exact spirit. We especially commend to our readers the diagram in which the muscular systems of the foot of man and the gorilla are placed side by side, and the important distinction between the tendons very well shown. This distinction it has been of late years the fashion to ignore, and was the subject of an animated discussion between Messrs. Rolleston and Carter Blake at the Newcastle meeting of the British Association

(1863). The facts which Mr. Carter Blake then asserted have been amply corroborated by Professor Owen's description in the present work ; and if Professor Rolleston reads the passage cited, he, perhaps, will see that his charges were not merely intemperate, but inaccurate. The voice of contemporary science has long since rectified the matter. With regard to the nervous system, Professor Owen's researches are of the most important character. He collects and incorporates in the present work a large amount of the notes of his Hunterian courses of lectures before the Royal College of Surgeons many years ago, in which the characters of the gyri, sulci, and convolutions are most carefully described. We think that every F.A.S.L. who is a student of the characters, anatomical, physiological, psychological, of the human brain should read Professor Owen's analysis of the method by which, taking the lowest and most smooth-brained gyrencephale as a starting point, the convolutions of the brain are *seriatim* developed, till at last we reach man. Professor Owen suggests a new classification of the cerebral folds, arranged in the order of their constancy in mammals, and differing from those of Rolando, Leuret, Gratiolet, and Broca, the three first of which he exhibits in parallel columns to his own, in a very lucid table on his 137th page. There are in all forty-five cerebral folds and forty-five cerebral fissures described by him. He notes all fissures by numbers, and all folds by letters, as in his memoir on the Anatomy of the Cheetah (1833). This system is highly convenient, although as Professor Owen points out, the "mode of notation has been reversed by a subsequent author, but no advantage from the innovation is pointed out, or seems to be gained thereby."

The chapter with regard to development needs also to be carefully studied, as it places the reader entirely on a level with the latest researches of the recent German embryologists on this most difficult and most complicated point of biology. We trust that no one will criticise either this chapter, or that on "general conclusions," who has not read and thoroughly comprehended the whole three thick volumes which precede. If anyone skips Professor Owen's facts, and flies at once to his 821st page of vcl. iii, he probably will be somewhat puzzled. Metaphysics and theology are alike discussed therein, and Professor Owen deems it his duty to expound his belief on the relation between physiology and theology. The following passages we think are plain enough, and we commend them to our readers as evidence that Owen is not deterred by what has been justly called "weak Exeter Hall drivel"** from expressing his full belief. He says:—

"I am most averse to travel beyond my proper province ; but a general physiological conclusion from the phenomena of the nervous

* *Tablet*, March 20th, 1869.

system inevitably brings on collision with a dogmatic affirmation or definition of the cause of the highest class of those phenomena instilled as an article of religious faith into fellow Christians, and on which is based their mode of thought affecting dearest hopes and highest aspirations. . . . If the hypothesis that an abstract entity produces psychological phenomena by playing upon the brain as a musician upon his instrument, producing bad music when the fibres or cords are out of tune, be rejected, and these phenomena be held to be the result of cerebral actions, an objection is made that the latter view is 'materialistic' and adverse to the notion of an independent, indivisible 'immaterial' mental principle or soul. What 'materialistic' means in the mind of the objector I nowhere find intelligibly laid down; but it is generally felt to be something 'inconsistent with, or shaking, the foundations of an article of faith,' as Stillingfleet would have said" (p. 821).

"In the endeavour to clearly comprehend and explain the functions of the combination of forces called 'brain,' the physiologist is hindered and troubled by the views of the nature of those cerebral forces which the needs of dogmatic theology have imposed on mankind" (p. 823).

"If the physiologist reject the theological sense to the term 'life' without giving cause for the charge of unsoundness in religious principles, does he lay himself more open to the charge by rejecting also the theologian's meaning of the term 'spirit,' of the term 'soul,' of the term 'mind,' and we might add of 'sin' or 'death'?" (p. 824).

"We know of nothing more 'material' than the 'centres of force,' our ideas of things without as within the 'ego' are the action and reaction of forces, as 'material' or 'immaterial' as the ideas themselves" (p. 824).

In the above passages the trumpet gives out no uncertain sound, and the meaning of the author is clearly expressed without any regard to the value of popular beliefs or to the mere evanescent prejudices of the nineteenth century. No fear of odium has here deterred Owen from "showing his colours."

Professor Owen may, perhaps, feel that, after he has taught, not merely anthropotomy, but the groundwork on which anthropological science is based, that a new generation of unscientific and semiscientific men may neglect his teaching and disown his doctrines. He has never been a "fashionable" teacher. Yet, when he contemplates the little energy and the feeble amount of vital force, which it is necessary to expend to become a teacher of modern English science, he may, perhaps, as many anthropologists now do, recall the words of Thiers (*Histoire de la Révolution*, p. 512):—"Depuis ces temps où Tacite la vit applaudir aux crimes des empereurs, la vile populace n'a pas changé. Toujours brusque en ses mouvements, tantôt elle élève l'autel de la patrie, tantôt elle dresse des échafauds, et n'est belle et noble à voir, que lorsque, entraînée dans les armées, elle se précipite

sur les bataillons ennemis." Teachers of comparative anatomy have little to hope or to fear from the epidemic disease termed "public opinion."

INAUGURAL ADDRESS TO THE PSYCHOLOGICAL
ASSOCIATION OF GLASGOW.*

By J. W. JACKSON, Esq., F.A.S.L., President.

PSYCHOLOGY may be defined as the science of the inner life of mind in contradistinction to the outer life of the body, with its subdivisions of anatomy or structure, physiology or function, pathology or disease, and we may, perhaps, add hygiene or health. Psychology also has its subdivisions. There is the mind in its normal and abnormal condition ; in vigilance, in somnolence, in exaltation, and in derangement, with the experiences peculiar to each. And lastly, there is comparative psychology, embracing the mental constitution of the various races of men, and the different species of animals—a rather extensive programme, as will be seen when we come to fill up this bare outline with its appropriate details. Let us glance at some of these.

There is mind in its normal condition, and as all our experiences of this have been in connection with a corporeal structure, one of the first subjects for our investigation is the nature and extent of this connection. Is mind necessarily, and so always, united with a physical organisation as an unavoidable condition, if not of its existence, then, at least, of its manifestation ? And, if so, then to what extent and in what manner is it dependent upon this organisation ? Are our mental operations merely a function of our corporeal structure, or is the latter simply an instrument provided for, and, in a sense, developed by the former ? And, in either case, to what extent is corporeal structure indicative of mental endowment ? Here we are brought face to face with phrenology, physiognomy, the psychognomy of the hand, and those other real or pseudo branches of science that profess to afford a diagnosis of character from corporeal indications. Is there any truth in these things, and, if so, to what extent is it mingled with error in the present state of these interesting, though scarcely recognised, departments of inquiry ?

Then we have mind in its normal condition of vigilance, with its powers of perception, memory, reflection, and imagination ; its moral

* Delivered February 23, 1869.

sentiments, its domestic affections, and its animal propensities. Now, what is perception? Is there in truth an objective sphere on which it can be exercised, and, if not, then are we to regard it as a purely subjective experience? And, granting that there is an objective sphere, what is our relation to its phenomena; to what extent are they modified by our subjectivity in the process of their apprehension; in other words, how far are actual things in congruity with our ideas?

Then, what is memory? By what process do we recall the past? This again involves the stupendous question, what is our relation to the time-sphere? By what law of our being does this immediate present that we term "now" become that remote past which we term "then"? Can we illustrate this speciality of duration by the corresponding speciality of extension, in virtue of which we are enabled to speak of "here" and "there"? Are time and space in very truth mere forms of thought, that is of *our* thought; and if so, by what speciality in our mental constitution are we thus compelled to contemplate events in sequence, and to perceive things in place? Does phrenology throw any light on this subject by its revelation of the fact that we have an organ of time and locality in immediate proximity to the perceptive faculties, and so placed between them and the reflective powers as to impress the ideas of duration and extension on all the varied subject-matter of thought?

And what are we to say to our powers of thought? By what sublime chemistry does the mind transmute the perishing facts of experience into the everlasting principles of things; by what process does it ascend from phenomena to the laws on which they depend? Have we any definite and satisfactory conception of the process by which we advance from an effect to the cause which has produced it? Nay, are we quite sure that this is the process which we really do perform? Are phenomena aught other than the play of our waking subjectivity, like the phenomena of dreamland, admittedly the play of our sleeping subjectivity? Is there, nay, *can* there, be aught *real* save that which is absolute and unconditioned, and if so, what is perception but thought apparently ultimated into fact, in certain states of the spiritual percipient?

And what is imagination? By what process do we frame ideas of things that are not? Have we not, indeed, some grounds for regarding imagination as a species of spiritual perception, a prelude to that which we shall presumably exercise on the higher plane of a future life? Has it not all the characteristics we might expect from perception in an environment more obedient to the plastic power of the spirit than that in which we are now placed, its apparent want of reality being due to the fact that it does not pertain to our present but to a prospective sphere of existence?

And what are our moral sentiments? Through what elements in our nature are we so related to truth and rectitude that their violation gives us pain—the indication that an injury is being done to our higher being? And how are we so related to that which is above us that we revere it? Is the sentiment of veneration our consciousness of the process by which we are growing into the likeness of that which is superior to our present condition? What is our sense of responsibility? In what present endowments does it originate, and what future possibilities does it indicate?

And what shall we say of the passions, of those more violent impulses and more grovelling propensities which we share in common with the brutes? Of what elements and relationships are these the indication? By what speciality of organic structure or mental constitution, does man, who mounts skywards to the empyrean in thought and aspiration, nevertheless sink earthwards into the mire and clay of sensuality, through these inferior attributes? Have we yet admeasured the stupendous *breadth* of nature implied in this dread ability to touch simultaneously two such wide extremes? Are not these passions the elements of action, still imperfectly disciplined, a remnant of chaos not yet fashioned into the order and beauty of creation; not the fragrant blossoms and beautiful flowers of the spirit, but the dark and unsightly *roots* of our being, and so, perhaps, necessarily somewhat of the earth, earthy?

And what are our domestic affections, whereby we escape from the narrowness of self into the more expansive realm of the family and the neighbourhood? Whence do these kindly susceptibilities originate, and of what higher spiritual attributes are they the symbols, and in a sense, perhaps, the germs? Are they the beginning and the promise of that universal love which only attains to completeness on the plane of the infinite, where the divine mind comprehends creation, encircling its manifold provinces in that all-embracing affection, from which no form of being is excluded as an alien to the great family of God?

And now, still keeping to mind in its normal condition, what is sleep, and how are we to define and account for dreams? Is unconscious slumber really dreamless? Do the experiences of our mesmeric subjects, when in the magnetic sleep, warrant any such conclusion? Are they not equally unconscious of the thought and action whereof we have been the witnesses, and in which they were the agents, but of which they awake utterly oblivious? And what are the scenery and *dramatis personæ* of dreamland? Why do we believe, night after night, in their reality, though we wake morning after morning to a vivid perception of their fictitious character? But are they fictitious—on the dream-plane? Has not somnolence its world as well as vigilance, their relation to

the consciousness being diverse, while their reality as psychological phenomena and their importance as educational instrumentalities may, for aught that appears to the contrary, be equal? At the lowest estimate, are not our nocturnal experiences "a dream within a dream;" life with all its stupendous interests being but "such stuff as dreams are made of," that is, subjective conditions, projected by the play of the consciousness into an apparent objectivity, whose reality is relative, not absolute?

Can we experimentalise on this subject by the aid of phrenomesmerism? Are not the experiences and manifestations of our magnetised subjects, of the nature of dreams, artificially induced and scientifically regulated? And are not the indications thus obtained very strongly indicative of the fact, that subjective conditions are the determining element of (apparent) objective projection? Thus, for example, by the excitation of philoprogenitiveness we induce activity in that phase of affection which consists in the love of children or animals, and a baby or a quadrupedal pet becomes at once present to the consciousness of the subject, who for the time believes in the objective reality of this subjective experience, with all the undoubting faith of a true dreamer. It is the same with benevolence, whose activity is almost invariably accompanied by a visional presentation of the hungry or ill-clad recipient of its bounty; while veneration, when duly evoked, will in a similar manner conduce to the attitudes and accessories of devotion. Now, with such an instrumentality at our command for the investigation of mental phenomena by experiment, we shall be exceedingly blameworthy if something be not done in this direction, to throw additional light on the conditions and processes of ordinary dreaming and even of visional ecstasy; while in accomplishing this, we shall, perhaps, also help to illustrate the laws of thought and imagination, as manifested in the condition of normal vigilance.

Perhaps the last sentence demands some expansion. As you are doubtless aware, the wondrous and altogether unexampled progress of physics during the last two centuries and a-half is wholly due to the inductive method of investigation, under which fact superseded hypothesis, and every theory, however plausible, was subjected to the test of experiment. Now the grand desideratum in mental science is this supercession of hypothesis by experiment, in other words, the substitution of the *à posteriori* for the *à priori* method of investigation. Nor can anyone who has watched the direction of the profounder intellectual currents of modern Europe doubt that this great revolution in metaphysics is steadily and surely approaching. Nor can we be mistaken in affirming that when it has arrived speculation will be subordinated to observation. But for the effective illustration of the laws

of mind, as of matter, we require something more than an accurate observation of spontaneous phenomena. We must also be able occasionally to institute an experiment, to put nature to the question, and evoke an answer at our pleasure. Now for this purpose phreno-mesmerism is invaluable. By this stupendous instrumentality we can first reduce our subject to the profoundly dormant and unconscious condition, attainable only in the magnetic sleep; and then at our pleasure we can evoke any one of the passions, affections, sentiments, or faculties into isolated manifestation; or we can combine two or more, and watch the manner in which they modify each other, or are acted on in turn by the introduction of a third or a fourth, as the experimentalist may determine. That such an instrumentality should have been so long neglected, while *à priori* hypotheses of perception and thought, of memory and imagination, together with the association of ideas, and all the time-honoured notions of the old metaphysics are still taught with professorial authority at all our universities, can only be paralleled by the corresponding fact, that the Ptolemaic Astronomy still had its endowed chairs, long after the calculations of Copernicus and the discoveries of Galileo had demonstrated its absurdity.

But, to return to our dream-life; there is yet one other subject in this connection which it behoves us to investigate; I allude to the symbolism said to underlie the weird forms of our nocturnal experience. As you are doubtless aware, the Bible, as a venerable Oriental record, contains several magnificent instances of this asserted spiritual correspondence, in the dreams of Joseph, and of the baker and butler of Pharaoh, together with those of that monarch himself, and also, we may add, of Nebuchadnezzar, as narrated in the book of Daniel. Now the question is, what amount of truth underlies this wide-spread belief of the older generations, whose almost universal prevalence indicates an element of veracity as its basis? Is the apparently chaotic imagery of our dream-life the symbolic vehicle of spiritual truth, perhaps no otherwise communicable; and if so, of what relationship to other, and perhaps higher planes of being, is this the mysterious indication?

Now from these very imperfect and fragmentary suggestions you will at once perceive that some most stupendous problems are still awaiting solution at the hands of psychologists, without transgressing the limits of that normal experience which is common to all men. But we shall greatly underestimate the range and importance of this branch of science, if we regard it as applicable only to the doubts and difficulties already enumerated. There is another province equally demanding the labours of a competent explorer. I allude to the mystic domain of those abnormal and exceptional conditions of mind which are not

common to all, but only to the favoured few, who enjoy the exaltation, or the pitiable many, who suffer from the confusion and derangement attendant on a departure from the ordinary standard of mental health and vigour.

And first of exaltation. What is genius? How are we to define it? In what does it consist? Has it any relation to corporeal structure? To what extent is it dependent upon circumstances for manifestation or for the form which its productions are to assume? Are all original thinkers endowed with this attribute? In what does genius differ from talent, and how far do those who possess it constitute a special order in the great hierarchy of intellect? Again, what are its distinctions and gradations? For example, by what elements is the painter distinguished from the poet? and how is the composer differenced from either? and by what speciality in the inspiration of the prophet is he elevated above the bard? What is inspiration? From what fountain does it flow? and on what speciality in the human recipient does it depend for the character and quality of the manifestations in which it is to eventuate? Was Raphael of necessity an artist? Had Shakespeare lived in any other than the Elizabethan age, and during a dramatic era, could he have produced Hamlet and King Lear? What is "the spirit of the age"? and how far are individual men, even of the most commanding order, its blind instruments and obedient spokesmen? This opens up the great question,—What is the relation of the individual to the mass? Does humanity constitute a vast spiritual unity, of which the masterminds of thought and action are but the special organs? and if so, what is the place of this unity in the scale of universal being?

We have spoken of the prophet. Now what is he, more especially in his highest aspect, as a religious founder? Can we, by the lowly road of induction, even remotely approach, to scan with profane eye, the sublime altitude on which he so serenely reposes as the regal hierophant of the ages? Let us try the lower steps of this angels' ladder, which, like that of Jacob, reaches from earth to heaven. What are presentiments? How do "coming events cast their shadows before," so that we become dimly conscious of the impending good or evil awaiting us on our predestined pathway through the wilderness of time? And what is the essential character of the yet clearer revelation afforded by actual prevision? What does this occasional liberation of the human mind from the limitations of the timesphere indicate? Can we experimentalise in these things? What, for example, is the clairvoyance of a mesmeric subject? and how does it differ from the lucidity of a spontaneous ecstatic? What is supersensuous perception? and on what organic or other conditions in the seer or his surroundings does

it depend? Is a prophet, even of the highest order, only an ecstatic lucide? and if so, do our clairvoyant patients approximate in any manner or measure to his condition? In short, are the great architects of faith simply arch-ecstatics, the most sensitive recipients, and so the representative spokesmen of the finer influences, or as we say, religious spirit of their respective ages?

Perhaps at some future period we may have a paper specially devoted to this subject; in the meantime I would observe that the authoritative creeds of men, and the forms of their worship, are all worthy of the most serious attention of the psychologist. Whether past or present, fossilised or vital, the various religions of mankind demand our profoundest study. Originating in the most exalted seerdom, often accompanied by great thaumaturgic power on the part of their founders, and requiring the most ardent faith on that of their early converts, they present us with psychological phenomena on the grandest scale and of the sublimest order, which, if wise, we shall not neglect, or again consign to the practical oblivion of ecclesiastical history. It is the same with the lives of saints and martyrs, whose visions, ecstasies, and inspirations are an invaluable storehouse of psychological experience; which a blind superstition may have preserved, and a shallow scepticism refused to accept, but which a true psychology, profounder than either, will employ for illustrating the laws of mental exaltation.

Perhaps some of you shiver in the glacial cold, and palpitate in the thin air of these Alpine heights of thought; so let us descend to a somewhat lower level,—I mean the once dread, but now despised, province of the occult. What was the ancient magic, and how were its wonders effected? To what extent were they dependent upon the mental condition of the operator? What was the old thaumaturgia, and what is modern spiritualism? No true psychologist will neglect either the one or the other. Were and are the results produced through their instrumentality of an objective or subjective character? What was a magician, and what is a medium? We must be prepared to investigate these subjects without the superstition of the past, or the superficiality of the present. Our duty is neither to accept nor reject a mystery as such, but as far as possible to lift the veil beneath which its processes are effected and its results accomplished; and I accordingly rejoice to know that a certain section of our association intend to devote their attention to a carefully conducted series of experiments, with a view to the elucidation of those extraordinary phenomena whereto modern spiritualists have so honourably borne their fearless testimony. This is what we need, if psychology is to become a science; namely, experimental investigation, conducted by

competent persons, provided with the requisite instrumentalities, and who will approach the subject devoid of those preconceived ideas which have hitherto fatally vitiated all inquiries in this direction. Nor in saying this would I be understood as referring only to the opponents of spiritualism; for the uninquiring acquiescence of a facile believer is often as damaging to the efficiency of inductive investigation as the blind opposition of the most bigoted antagonist; for if the latter sees less, the former as often perceives more than the facts warrant. Let us, then, endeavour to avoid either extreme; and we cannot do so more surely than by strict obedience to the rules of the great master of Induction, so clearly laid down for our guidance in his remarks on *Idola*, in the aphorisms of his "*Novum Organum*."

And here let me recommend that, in such investigations, you do not neglect the domain of popular superstitions. The psychology that despises ghosts, wraiths, doppelgangers, and second sight, is on a level with that which has so long regarded phrenology and mesmerism with distrust, and esteemed dreams and presentiments as beneath its serious notice. Such a psychology may be very respectable and inoffensive. Like other tame mediocrities, it may have few bitter enemies, and excite little serious opposition; but I must warn you that it will accomplish no great results. Popular superstition is a vast storehouse of records relating to the spontaneous occurrence of psychological phenomena, and our duty is not to reject the whole of this testimony without inquiry, because the fortunately situated observers of these rare phenomena were mostly incompetent; but to sift and compare their narratives, and where possible, to illustrate and parallel the spontaneous by the induced. Neither will a true psychology despise the phenomena of insanity, or even of idiocy. With the former, there is often a combination of some of the specialities of exaltation; so much so, indeed, that many of the ancient prophets would, doubtless, have been consigned to a lunatic asylum had they flourished in modern Britain in place of ancient Palestine. While amidst the deficiencies of the latter, we may often detect the animal instincts in a state of activity and predominance, normal only on a lower plane of being; but here so far united with a certain measure of human intelligence, that we may obtain additional knowledge of their essential character by the insight occasionally afforded through this exceptional combination. Hitherto these phases of mental obscuration have been regarded almost solely from the standpoint of modern medical empiricism, careful only of the cure, and regardless of the psychology of the case, as compared with its pathology,—to the disadvantage, perhaps, even of the latter, for shallowness and superficiality are seldom the most assured roads to success, even in matters practical.

But extensive as our survey may have seemed, and manifold as are the various provinces of inquiry we have enumerated, they by no means embrace the entire domain of psychology, which, like anatomy, boasts of the comparative among its other departments. What are the psychological specialities of the various races of men? How are they differenced by their respective passional, affectional, moral, and intellectual endowments? To what extent do they vary in their aptitude for art, in their ability for science, in their talent for literature, and in their capacity for government? Are these diversities inherent and unalterable, or merely the passing effect of casual circumstances? To what extent are they connected with and dependent upon organic specialities, and how far are they the expression and reflection of teluric and climatic influences, acting with the steadily accumulative force acquired by hereditary transmission through many successive generations?

It need scarcely be said that to answer these queries satisfactorily, we shall need to define what man is, contemplated psychologically. And to accomplish this, comparative psychology must embrace the entire animate scale, with all its diversified classes, orders, genera, and species of sentient being. What is a brute? How does he differ from a man? By what process of subtraction shall we define his lower place in the great scheme of conscious existence? Are his specialities reflected in his organisation? From the worm to the lion, is brute mind emblemed in brute structure; and if so, shall we ever prevail to read it off with precision? Are the teeth and talons of the tiger simply its ferocity and cruelty, ultimated in predatory instrumentalities? Is the dove a fair embodiment of love and gentleness? and are opposite qualities equally reflected in the structure of the eagle and the falcon? This, again, brings us back to the connexion between mental aptitudes and organic conditions, a problem whose solution must, as we have said, embrace the various races of men as well as the different species of animals.

Now, it must not be supposed from what has been just said that I would have you enter upon the investigation of all these subjects at once. They embrace problems whose solution will probably demand the labour of many generations. But it is well that, while devoting ourselves to special departments of inquiry, we should not wholly lose sight of the vastitude of the area which extends before us, and whose effective illustration will doubtless tax not only our energies and resources, but also those of our successors. But it is a noble field, and will amply repay whatever labour we may bestow upon it; and although, whether as individuals or as an association, we can only hope to contribute an insignificant fraction, "the widow's mite," to-

wards the great fund of knowledge which is being slowly accumulated on this subject, still it is our duty to make this offering; nor can we doubt that in the effort to accomplish it, we shall have our reward in those habits of more accurate observation and of profounder thought, to which our labours, as experimental psychologists, can scarcely fail to prove the precursors.

THE PHYSIOLOGY OF THE BRAIN.

To the Editor of the Anthropological Review.

SIR,—In your last number, in a notice of my pamphlet on the “Science of Man,” you say, “Mr. Bray seems in a dreadful hurry that every one should believe as he does; he seems to be one of the few remaining mongrel philosophers who believe in Spurzheim as their god, and George Combe as his prophet. . . . We are sorry for Mr. Bray; if he could only get phrenological jumble out of his blood he might yet write wisely. Mr. Bray asserts, ‘the bridge between physics and metaphysics has been found.’ By whom? this we are not told.” Now, Sir, will you allow me a short space to show why I cannot get “phrenological jumble out of my blood,” and why “I am in a dreadful hurry that every one should believe as I do”? In my book, “Force and its Mental Correlates,” I have shown that mind is a correlate of the physical force, and that thus metaphysics is necessarily based on physics; but I claim no merit as a discoverer, and Herbert Spence and others have been before me in the same field. Herbert Spencer says, “that no idea or feeling arises, save as the result of some physical force expended in producing it, is fast becoming a common place of science.” But to this subject I shall be glad to return, if you will allow me, on a future occasion; at present I will confine myself to the other questions.

I think these may best be answered, if your readers will excuse the apparent egotism, by a short account of my “conversion” to phrenology, and my “experiences” since. Surely the life-experience of a really earnest man, who is not a “professional” anything, must be of some interest, and perhaps of some value to those who care for the truth only. I started with as strong a prejudice against phrenology as any of your present readers can possibly have. I was well up in the old and modern metaphysicians, and in my young conceit I regarded the new pseudo-science as unworthy of notice; in fact, beneath contempt. In the spring of 1835, exactly thirty-four years ago, I was staying in

the Isle of Wight, and engaged in writing some lectures on education for our Mechanics' Institution ; I had occasion to send to town for Combe's *Physiology*, and by some mistake, which I could not account for, the publisher sent me Combe's *Phrenology*. Having nothing else to do I began to read it ; I soon got interested, and before I had read far my prejudice was gone, and I wished phrenology might be true, as its list of faculties and its mental system were so much more complete and perfect and practical for educational purposes than those with which I was then engaged. I threw my educational lectures into the fire, for I saw I had to begin again, and my "Education of the Feelings," now in its third edition, was the result. In this work I give the use and abuse of each faculty, and endeavour to show how each may be best trained and cultivated. But I became very anxious to know what truth there was in the organology of phrenology, and I accordingly hastened off to town, had my head shaved, and got Mr. Deville, of the Strand, to take a cast, to be examined by myself at my leisure, to see how far what phrenologists might have said of it corresponded with what I knew of my own character. Of course, as I discovered afterwards, it was not necessary to have my head shaved, and I merely mention it to show that I was in earnest. I have no doubt you, Mr. Editor, or some of your readers, would think it a very desirable, if not a necessary thing, to do on my own account, and you would probably look with some interest at the cast to find the crack. I also purchased of Deville one hundred casts of heads, which contained illustrations of all the organs, both fully developed and small. I must confess that at first I had some difficulty in being able in all cases to see this difference, but I never missed an opportunity of examining every head that I could get at where I knew anything of the character. After three years I had verified much of what phrenologists considered established. But my principal difficulty was with the forehead, "the straightened forehead of the fool." I had found most of the organs both large and small, and functions in accordance, but I repeatedly found, particularly in ladies, what appeared to be very large foreheads, without a corresponding amount of intellect ; in fact, with very foolish people. Hitherto I had no personal instructor, I had followed Gall's method ; wherever I heard of any peculiar talent, any mental or moral characteristic, I examined the head—but, fortunately for me, about that time (1838), George Combe, who was lecturing at Birmingham, came to stay with me, and I mentioned my difficulties about the forehead to him. He wished me to get some skulls ; I selected a large handkerchief-full from a heap, I will not say where, but none of their original owners have since applied for them. We sawed them in two, and he showed me that the part of the brain connected with the intellect was that which

lies upon the supraorbital plate, of which the forehead, particularly in women, as seen in front, was a very imperfect and often delusive indication, as the hair in some people went back almost to the middle of the head, the bald part showing a forehead ; and where the intellect was very shallow the forehead was often very high, as it then included the feelings in the moral region above it. He taught me how to measure the size of the supraorbital plate, and of the anterior lobe which lies upon it ; and thus, aided by George Combe's experience, my difficulties in that and in some other directions vanished.

You speak, Sir, in one of your annual addresses, as President of the Anthropological Society, of Mr. George Combe as an enthusiast : he was, I think, the most cautious Scotchman I ever knew ; his cry was always for facts, facts, facts, and he would listen to no theories, however plausible, without. He was one of the very last men to make "assumptions," or to accept "erroneous inferences." He perhaps paid too much deference to public opinion, keeping some things back lest the public should not accept others ; but I am quite unable to appreciate, or even to understand, the difference you seem to wish to make between Gall, and Spurzheim and Combe. I have all their works, and have read them carefully more than once, and certainly Combe's last and fifth edition of his *System of Phrenology* contains all the discoveries of the other two, and much more. As to diversity of opinion on the question, as to whether the brain is the organ of a separate entity called the mind, or the mind is a function or power of the brain, I think such differences ought not to separate us from all the facts that have been collected and recorded, and from the very useful inferences that have been drawn from them. Neither do I think the name by which we shall agree to call this collection of facts and inferences of much importance, whether Encephalotomy or Phrenology. I prefer the latter certainly, not only because it is easier to pronounce, shorter, and more generally known, but because it is really with the mind, and not the brain, that we have to do. Whatever we may *infer* with respect to the brain, and matter, and forces outside ourselves, and the way in which they may create and act upon our consciousness, it is that *consciousness* only of which we *know* anything. The objects of knowledge, in reality, are ideas, not things.

But to return to my own experience. I believe I was able to verify most of the separate "functions of the brain," said to be established by phrenologists. I do not mean to say that each of the thirty-six orthodox organs were simple or primitive in their functions, but that the functions ascribed to that particular part of the brain, whether simple or complex, belonged to it ; the American phrenologists have subdivided the organs into about one hundred, with how much truth

I cannot state ; neither do I mean to confine the organs to thirty-six ; Mr. H. G. Atkinson has made discoveries of organs lying within the falciform process, and I think I have discovered two or three on ground yet unappropriated, besides the discovery at once, from the shape of my own cast, that the organ called by Spurzheim Inhabitiveness, and by Combe Concentrativeness, is in reality two, and both gentlemen were right. The eye gradually educated itself, so that differences in the shape of the head, at first unnoticed or seen with difficulty, became evident at a glance ; the same as in a good judge of horse-flesh, the eye falls at once upon the different points and muscles required for the different services. The simplest division of the brain is into animal, moral, and intellectual faculties ; a less simple, but equally recognisable one, with a little experience, is into the social, the self-protecting, the self-regarding, the moral, the religious, the aesthetic feelings, and into the perceptive and the reflective faculties. These divisions the eye of the practised phrenologist recognises at once, and with a little closer attention the modifications and combinations.

Let a student begin with the simplest. Take a line from the angle of the eye and see how much the forehead hangs over the face as a measure of the anterior lobe, the general intellect ; next, let him rest his hands on the top of the ears and bring the thumbs to meet at the upper part of the forehead ; the portion of the brain above that is connected with the moral region ; and the part behind the ear and in front of it at the base of the brain, is connected with the animal feelings. A good shaped head, measured from the opening of the ear upwards, should be as high to the top as it is broad across or between the ears, and it should be square at the top ; if it slopes too rapidly on each side it shows firmness large, and conscientiousness less so, and firmness may be equally the servant of the lower as of the higher feelings. Our most respectable and highly intelligent superintendent of police I found had long been a phrenologist without knowing it. In choosing his men he said he rejected small heads, and chose over-hanging foreheads and high heads, as far removed as possible from the criminal type, with which he seemed to be perfectly familiar. Even the knowledge so far gained of character is of the highest importance. Breeding, education, and the reticence now the great and almost universal characteristic of good society, make it as difficult to judge of character under this smooth and smiling surface, as it is to realise the storm at sea under the calm blue sunshine and gentle ripples of the wave upon the shore. A well educated man, with no higher feeling than a desire to please, can reflect, or assume for the time, any character that the society he is then in requires and most values, whether of high or low feeling ; but follow that man home and you find a mere selfish animal. The highest

virtues are often the quietest and the most retiring, and the spiritual faculties are out of place and invisible in the world at large, and the garb and language of them can be put on for the time and for a purpose by the most selfish ; but the least experienced phrenologist sees at a glance the kind of man he has to deal with, which knowledge is only acquired by others on more intimate acquaintance. Alas, *that* knowledge with too many comes too late ! I distinguish at once the selfish from the unselfish ; the affectionate from the cold-hearted ; the proud, and vain, and boastful,—all whose geese are swans—from the modest and retiring ; I know at once the man who is in a constant state of opposition and turmoil, and who fancies all the world is quarrelling with *him* ; the revengeful and vindictive ; the desponding or hopeful ; the open or reserved ; the coward or the brave ; the miser and the book-worm ; the kind, the courteous, the conscientious, and the firm ; the credulous or the sceptic ; the poet and the wit ; the man who, with a great spiritual and poetical sense, and feeling out of harmony with the world around him, is as great a mystery to himself as to the people on a lower phase of feeling beneath him ; &c., &c.

Then as regards the intellect. As we have calculating boys, with a large organ of number, so other faculties may be as abnormally large, and give special talents, or they may combine and give special genius, or they may be all large, with active temperament, and give universal genius ; so, again, in deficiency ; one person in eighteen, Sir David Brewster showed, could not distinguish some colours from others, and about one in eighty was colour-blind ; not from defect in the eye, but in the brain. And it is the same with all the other mental faculties ; they may all be similarly deficient, and this constitutes idiocy ; if deficient only in some particular faculties, that is partial idiocy. A person may be as blind, or incompetent, in the reasoning powers from deficiency of brain as in the perception of colour, but what is very extraordinary is that people very rarely find out their own shortcomings in this respect, and a good memory for facts and events, and a good talking power too often hide them from the world ; and we have people with small brains, much talk, and little judgment, placed in high places, to the infinite damage of the widest interests. I maintain, after an experience of more than thirty years, that whatever may be the deficiencies of phrenology—and doubtless it is at present anything but a perfect system—it enables us to see these things at a glance, and we know at once the kind of man we have to deal with, so that a wise man may look upon the world as a sort of zoological garden, where every animal has to be fed and treated according to its nature.

Surely this is the most valuable of all knowledge, and you ought not to be surprised if I am in "a dreadful hurry that more people should believe as I do;" that there were more "mongrel philosophers" with my experience; and that I am a little impatient that anthropologists should be confining their researches to dead matter and mere bodily characters, instead of living mental functions. Beauty and harmonious development of the brain are now inseparably connected in my mind; and your cautious induction, Mr. Editor, on the special faculty of language, with Dr. Bouillaud's "Observations and Experiments," appear to me *just the same* as if from careful examination of the structure of the eye, and pathological observation, and the use of the ophthalmoscope, you had just discovered that its probable function was to see with; that is, the left eye, but by no means the right. I have no objection to begin *de novo*, if we are not called upon to give up what we do know, and if our knowledge by thus beginning again can be made more definite and certain. But we must use Gall's method, which is to judge of mental function or power from what it does; we know that we see with our eyes, and we have not learned that fact from cutting up the eye, or from blind people, although anatomy and pathology may sometimes tell us why some people cannot see. We know equally well that a particular position of the eye-ball indicates what is vulgarly called the "gift of the gab," that is, it indicates good verbal memory, or facility in associating words or names with ideas. We know that this position of the eye-ball is owing to an indentation in the supraorbital plate caused by the abnormal size of a convolution of the brain. No doubt we have still much to learn about this faculty, and verbal memory may be its primitive function, but its manifestation or mode of action depends very much upon its association with other mental powers. Granting that there is the power I have indicated of judging of character, and I do not think I have been deceiving myself all these years, no doubt you are prepared *fully to admit* its great utility. It enables us to choose our servants and assistants in all departments; and I have always been, with one exception, the particulars of which it is not necessary to mention, well served, because I have been able to put the right man into the right place. I have done more—I have been able to start at least half-a-dozen young men in the direction that nature had *specially* intended them for; I took the square pegs out of the round holes, and in each case with complete success. It has enabled me also to choose my friends, for we know at once, and not by too often painful experience, upon whom we can implicitly rely, or whose friendship or principle is sure to break down under pressure.

But phrenology is not only practically useful wherever man is con-

cerned ; it not only, by the very general admission even of those who deny its organology, presents the best system of mental philosophy, but it seems to me to furnish the key to all those deep metaphysical problems upon which mankind have hitherto been so hopelessly divided. It shows how part has been added to part in the brain as we rise in the scale of animal power and intelligence, with varied function in proportion to increased complexity of structure. It shows exactly how, and by the aid of what faculties, the world is created within us ; and not only the physical world, but, through our likes and antipathies, the moral world also. As the fly, with its microscopic eye, and thousand lenses, is thus enabled to live in a world of its own, so the addition of a single mental faculty in man might place him in a very different world to that in which he now lives ; for he knows of the world only as it acts upon him, and there may be thousands of influences that never reach his thick and limited perceptions. "There are," says Professor Tyndall, "numberless waves emitted by the sun and other luminous bodies which reach the retina, but which are incompetent to excite the sensation of light. If the lengths of the waves exceed a certain limit, or if they fall short of a certain other limit, they cannot generate vision ; and it is to be particularly borne in mind that the capacity to produce *light* does not depend so much on the *strength* of the waves as on their *periods of recurrence*. I have often permitted waves to enter my own eye of a power which, if differently distributed, would have instantly and utterly ruined the optic nerve, but which failed to produce any impression whatever upon consciousness, because their periods were not those demanded by the retina." (*The Fortnightly Review*, Feb. 1869.)

But I cannot now pursue this part of the subject ; perhaps you will allow me at some time to return to it. Let us rather take one or two of the practical questions that are now before the world, and view them by the light that phrenology throws upon them. Let us take the Civil Service competition examination. It may be quite right that no one should be employed who is not sufficiently well informed to pass such an examination, but to employ men *because* they pass is exceeding folly, as such an examination furnishes no test of *character* whatever. It does not even correctly measure the intellectual power ; for a person may be as blind in judgment as some are in the power of seeing colours and yet pass such an examination. With the faculty of language, and of simple and relative perception, well developed, a person may be easily crammed to pass such an examination and yet be weak in body, idiotic in reflective power, and altogether deficient in the moral sense. Supposing that even an examination tested the whole intellect, instead of a few faculties, great intellect is too often at the

expense of bodily and vital power, and its possession gives no guarantee as to how it will be used. Such an examination is as likely to furnish only a clever rogue, as an honest, persevering, good man ; and yet how the world chuckles at its wisdom, and congratulates itself on its great advance in this department !

The *Pall Mall Gazette*, commenting on the result of this system, now in operation for the last fourteen years, says (April 27, 1869), with reference to the Civil Service clerks: "Some, of course, had been inordinately crammed, and have found their level ; others were shady characters, and went (as the Bishop of Cork would say) to the — ; but the greater proportion at once showed themselves to be intelligent, educated young gentlemen, ready for anything that might be put before them, and eager for work." No doubt, *ready for anything*,—at least, there is no reason in their examination why they should not be ; still, this little glimmer of common sense has proved to be better than the previous system based on jobbery.

Let me give one more illustration. I have shown that in proportion as the animal, moral, or intellectual region of the brain predominates, do we get a man or a mere animal. If the intellect and moral region predominate, we have a man who is ordinarily a "law unto himself," and who, if he falls into crime, does so inadvertently or under strong temptation. If the three regions are equally developed, the man will depend upon education and the circumstances, favourable or unfavourable, in which he is placed ; if the animal region decidedly predominates, we have a brutal animal ; if the animal region and intellect, often a clever rogue ; but in either case, when at large, always preying upon society. Now, in February, 1836, Sir G. S. Mackenzie petitioned Lord Glenelg, then Secretary to the Colonies, that the knowledge we have upon the subject might be used in the classification of our criminals. "At present," he said, "they are shipped off, and distributed to the settlers, without the least regard to their character or history." "There ought," he said, "to be an officer qualified to investigate the history of convicts, and to select them on phrenological principles. That such principles are the only secure grounds on which the treatment of convicts can be founded ; proof may be demanded, and it is ready for production," etc. In a separate letter, Sir George said, "men of philosophical understanding and habits of investigation have been brought to perceive that a discovery of the true mental constitution of man has been made, and that it furnishes us with an all-powerful means to improve our race. . . . Differences in talent, intelligence, and moral character, are now ascertained to be the effects of differences in organisation. . . The differences of organisation are, as the certificates which accom-

pany this show, sufficient to indicate *externally* general dispositions, as they are proportioned among one another. Hence, we have the means of estimating, with something like precision, the actual natural characters of convicts (as of all human beings), so that we may at once determine the means best adapted for their reformation; or discover their incapacity of improvement, and their being proper subjects of continual restraint, in order to prevent their further injuring society. . . . And if, as thousands of the most talented men in Europe and America confidently anticipate, experience shall convince you, your Lordship will at once perceive a source from which prosperity and happiness will flow in abundance over all our possessions. In the hands of enlightened governors, phrenology will be an engine of unlimited improving power in perfecting human institutions, and bringing about universal good order, peace, prosperity, and happiness."

This petition was backed by a whole bookful of certificates, principally of celebrated medical men, and many of them quite equal in scientific eminence to any of the professors of the present day; among whom are Sir W. C. Ellis, M.D., Dr. C. Otto, of Copenhagen, Dr. Joseph Vimont, of Paris, Dr. Wm. Gregory, F.R.S.E., Dr. Whateley, Archbishop of Dublin, etc., etc.; and yet this is now quite forgotten, and we have a generation brought up in ignorance of phrenology, and taught to despise it; and we have our *Anthropological Journal* declaring that "the present system of phrenologists, with all their assumptions and erroneous inferences, will soon become a theory of the past;" and we find its really talented editor groping about, *like a blind man*, after the very first organ that Gall discovered.

About the same time (April 1836), George Combe was a candidate for the chair of Logic in the University of Edinburgh, and he also has printed a whole volume of testimonials from the leading men of the age, not only in this country, but in Europe and America, who certify—

"That phrenology, viewed as the abstract science of mind, is superior to any system of mental philosophy which has preceded it.

"That it contains a true exposition of the physiology of the brain.

They also certify "to its application in discriminating the varieties of insanity.

"To its bearing on the classification and treatment of criminals.

"And to its application to the purposes of education."

What an extraordinary hallucination must, then, have seized the educated and scientific world at this time, Mr. Editor, if phrenology be what you now describe it? Sir William Hamilton was chosen on that occasion, and not Mr. Combe, and I do not hesitate to say that the mental and moral philosophy of the world has been put back at least a quarter of a century in consequence.

Of course, the prayer of Sir George Mackenzie's petition could not be granted. What would all the parsons have said to the doctrine, that "differences in moral character are now ascertained to be the effects of difference in organisation"! What becomes of freedom of will and responsibility, on that view! We should have required a new system of ethics, based on the fact that mind is as much the subject of law as matter,* and that that is free, as defined by Spinoza, "whose action is determined by itself (whether that self be in its nature good or bad), and not by another." We must have laid aside our notions of retributive justice, and have been obliged to admit that no punishment is just that is not for the good of the individual offender; and that this being the case, nature's punishments are the same whether our actions are voluntary or involuntary. In fact, we should have been obliged to make precisely the same reforms in our criminal system and in our gaols as we have, during the present century, effected in our lunatic asylums, and on precisely the same principles. But society was not, and is not, prepared for this.

There are many reasons to assign for the present position of phrenology in public estimation. The first, and I have no doubt the strongest of all, is the *odium theologicum*; for there is no denying that its doctrines are opposed to the popular theology; theologians have, therefore, talked of its materialism, and have given it a bad name. It was George Combe's attempt to hide this that brought his favourite science and himself into disrepute and disfavour among the class of men who ought to have been the first to acknowledge the merits of both.

There is also much in what you say, that "Gall's theory, if true, unmasks all impostors. No man appears to a disciple of Gall other than he is; and this is utterly repulsive to some men of high scientific and social position." This is true also, because a very small brain and limited intellectual capacity are quite compatible with "high scientific and social position," and there is also a very large class—people with large secretiveness—who instinctively hate to have the internal workings of their mind, their thoughts, and feelings, and capacities, dragged into the light. There is also, as you say, much in the *odium* brought upon it by some of its English disciples. Incompetent and uneducated professors make a trade of it, and profess to give characters from a shilling a head upwards; and although there is no reason why a properly qualified person should not practise phre-

* In my *Philosophy of Necessity* I have endeavoured to present a system of ethics based on this fact, and to show that we have no cause to fear for the interests of virtue and morality, which are based upon laws as fixed and determinate as the law of gravitation.

nology as a profession, quite as much as a medical man, and with more benefit to the world, yet there is no diploma, and the quacks predominate. Scientific men of position dread to be associated in any way with this sort of thing ; but what most influences them, I have no doubt, is that phrenology is what Professor Masson describes it, "a science of mind made easy." When once discovered, like many other great truths, it is very simple ; and men of science are looking for that which is abstruse and difficult, and not for that which every fool could understand. They therefore prefer metaphysics, where each man can have his own system, which neither he himself nor any one else can understand. We have, perhaps, all heard of the celebrated watch of a certain railway official, who would remark, on consulting it, "If the sun is not over the hill in a minute and a half, he'll be late." I have noticed that most scientific men are blessed with a watch of this kind, that tells the time in mental science so correctly, that all facts that do not come up to its time are beneath their notice.

I have to apologise for the length to which this paper has unpremeditatedly extended, and for its personal tone ; but I have given it this form purposely, in the hope of inducing people to follow my example, and to examine phrenology in the way I have done, for themselves, uninfluenced by public opinion, which, in this instance, would mislead them. If they will do this, I feel certain that they must come mainly to the same conclusions. I do not know a single person who, upon such careful examination, has rejected them. The objections that are ordinarily brought forward about the frontal sinus, want of parallelism in the external and internal lobes of the skull ; the hardness of the skull, as preventing expansion of the brain ; difference in temperament or quality of brain ; hereditary tendencies and transmitted mental aptitudes, etc., have no practical weight, and present little or no impediment in practice. The temperament, or the degree in which the muscular, cellular, vital, or nervous systems predominate, is the most serious difficulty ; but the experienced phrenologist knows as well what degree of activity of brain to expect, as the experienced physician is able to judge of the action of other parts of the bodily system, both in health and disease, from the complexion. If people will study the subject, it will amply repay them. Let them begin with Gall "On the Functions of the Brain, and of each of its parts ; with observations on the possibility of determining the instincts, propensities, talents, and the moral and intellectual dispositions of men and animals, by the configuration of the brain and head." Spurzheim's works will be found invaluable for their plates of the brain of man and animals, and other illustrations of development ; and George

Combe's fifth and last edition of his *System of Phrenology* contains all that is required for ordinary study of the subject. In the twenty volumes of the *Phrenological Journal* will be found a full discussion of the whole question from its first introduction into this country, with precisely the same objections, and the answers to them, as in the present day.

Coventry, May, 1869.

CHARLES BRAY.

THE ORIGIN OF THE ENGLISH.—PIKE *v.* NICHOLAS.

A most important trial to British Anthropologists, and to literary men in general, has been recently decided in Vice-Chancellor James's court. The case of Pike *versus* Nicholas had been, for several months previous to the trial, known to be one which produced the greatest interest, and when, on the 27th of April, the cause commenced, a large number of Fellows of the Anthropological Society, and many celebrated literary men, were in court.

Mr. Grove, Q.C. (late President of the British Association for the Advancement of Science), and Mr. Jemmett, were for the plaintiff; Mr. Kay, Q.C., and Mr. Osborne Morgan, M.P., for the defendant.

Mr. Grove, in his opening address, gave an outline of the history of the suit. Mr. Pike, he said, had been an open scholar of Brasenose College, Oxford, and had passed through the usual stages up to the degree of M.A. He had been called to the bar in 1864; but, instead of practising, had devoted himself to literary and scientific pursuits, and especially the study of Anthropology in its various branches. He had, as early as 1858, made some jottings for the philological portion of his work, *The English and their Origin*; he had collected various materials bearing upon the subject, in many of its aspects, before the year 1864.

In the autumn of that year, there appeared an advertisement offering a prize of one hundred guineas for the best Essay upon the *Origin of the English Nation*, in English, Welsh, French, or German. The money was to be paid partly by Mr. Arthur Johnes, and partly by the National Eisteddfod. Mr. Pike, after some correspondence, in which he stated that he had already collected materials for the work, agreed to compete, on condition that, if unsuccessful, his MS. should be returned to him. Eleven essays were sent in on the 1st of March, 1865, and the decision of the judges was made known in the autumn of that year. The judges were Prince Lucien Buonaparte, Mr. Arthur Johnes, and the Rev. Basil (now Archdeacon) Jones. The last mentioned gentleman expressed high approbation of Mr. Pike's work as "a remarkable production;" hoped that it would be published, and would receive the prize, and declared that no other essay was worthy of consideration, or possessed any originality. Mr. Arthur Johnes also declared Mr. Pike's essay to be the best; and though he differed from its conclusions, thought that it

would be for the benefit of science that it should be published. Prince Lucien Buonaparte, without giving any opinion on the relative merits of the competing essays, declined to enter into arguments which were not philological, and [Mr. Pike having spoken somewhat slightly of Philological Ethnology] recommended that the prize should not be awarded. In the official report of the Eisteddfod, it was announced that Mr. Pike's claims were not set aside, but only deferred, and that the prize was offered again for the following year. Mr. Pike, however, did not see fit to accept this invitation, or to change his matured opinions in accordance with the opinions of those who differed from him. He spent some months in revising and correcting his work, and published it in May, 1866.

Dr. Nicholas was a competitor, under the name of "Multis Unus", in 1865 (when both Mr. Basil Jones and Mr. Arthur Johnes pronounced his work to be the second best), and again in 1866. It appears that in the latter year, the essays were not sent in until the 2nd of July, some time after the publication of Mr. Pike's book. Dr. Nicholas's *nom de plume* was, on this occasion, A. B. C. Z., and the judge was Lord Strangford. The latter, in his adjudication, referred to the appearance of Mr. Pike's book, and assigned that as a reason for again withholding the prize. The plan, arrangement, and some of the matter of A. B. C. Z.'s essay he mentioned in laudatory terms; but added significantly, that it was "typically second-hand," and that the world would lose little, if it never saw the light.

In July, 1867, Mr. Pike received a letter from Mr. C. Carter Blake, enclosing a prospectus issued by Dr. Nicholas, and calling his serious attention to the extraordinary similarity between the language and arguments in it and in Mr. Pike's book. The book, for which subscriptions were asked in this prospectus, was published in the beginning of 1868, under the title of *The Pedigree of the English People*. The plaintiff first became aware of its publication when he was requested to review it for the *Anthropological Review* in March, 1868,—both Mr. Pike's and Dr. Nicholas's book, it should be observed, were published by the firm of Longmans,—and after some correspondence and an interview with Mr. Wm. Longman, consulted his solicitors. They advised him to file a bill, and obtain an order for the production of Dr. Nicholas's MSS. of 1865 and 1866, as well as of the MS. from which Dr. Nicholas's book was printed. This was accordingly done; and the plaintiff's case rested, therefore, not simply on the two books, but also upon the indicia of the MSS.

The plaintiff's charge was that nearly the whole of the argument contained in the third portion of the defendant's book, was copied from, and a piracy of, the plaintiff's book; and that the defendant had made an unfair and illegitimate use of the plaintiff's book, so that the book of the defendant did not constitute, as it professed to do, an original work.

Mr. Grove then proceeded to comment upon the identity in plan of the two books. The two plans were set out in the plaintiff's bill in the following manner:—

Plan of the Plaintiff's book.

CHAPTER I.
The Historical Evidence.

*Plan of the Defendant Thomas
Nicholas's book in Part III.*

CHAPTER I.
The Historical Argument.

CHAPTER II.
The Philological Evidence.

CHAPTER II.
The Evidence of Philology.

CHAPTER III.
Same subject continued.

CHAPTER IV.
Development of Early English
Law.

CHAPTER III.
The Evidence of Physical
Characteristics.

CHAPTER V.
Sec. 1. Evidence of Physical
Characteristics.

Sec. 2. Evidence of Mental and
Moral Characteristics.

Mr. KAY here interrupted with a remark, that he should have something to say about the manner in which those parallel plans had been drawn out; but for the present he would only observe that the words "Mental" and "Moral" were different from the word "Psychical", which the defendant had not used.

Mr. GROVE said his learned friend might possibly discover, before the case was concluded, that the defendant had used that word "Psychical"; but for the present he would content himself with calling attention to some of the most striking instances of verbal similarity, though these of course did not constitute the substance of what he relied on. He would begin with the criticism of Gildas in the two books, and in the defendant's prospectus.

We give these passages in parallel columns:—

Plaintiff's book, p. 21.

"Gildas is the only authority an Englishman can appeal to. Who, then, was Gildas?"

The latter sentence also appears at p. 20.

Plaintiff, p. 16.

"A necessary part of a child's education."

"A Cambridge Professor of History does not scruple to dilate upon the merits of our Teutonic race."

Pike, p. 23.

"Allowing, then, that Gildas, no matter who he may have been, lived in the sixth century, we come to our third and most important question, How far may we trust him?"

Plaintiff, p. 25.

"It is impossible to glance either at 'the history' or at the 'epistle' without coming to the conclusion

Defendant's Prospectus.

"Gildas is the great original authority.

"But who was Gildas?"

Defendant, p. 245-6.

"This belief, instilled to this day alike into the child's mind in the nursery, and the student's mind in the lecture-room."

Nicholas, p. 252 and 250.

"But allowing that Gildas was an authentic person, the author of the *Excidium Britanniae*, how far is his book an adequate authority for the belief founded upon its representation?" P. 252.

Defendant, p. 258.

"It is utterly impossible to receive his statements as anything else than the spleenetic exaggerations of an ill-

that the author's mind was in an uninformed and prejudiced monk's healthy condition.

Mr. GROVE, after reading these passages, said there was not only identity of words, such as he had pointed out, but identity of argument, identity of quotations, identity of purpose, for which the criticism was used; and the same phenomenon ran through the whole of the passages, of which complaint was made, in the defendant's book. There was a series of curious coincidences which it was impossible to explain according to the law of probabilities, except on the hypothesis that one book had been copied from the other. The whole of the passages upon hair-colour, and skull-form, had been taken, he submitted, by the defendant from the plaintiff, and he would give some curious instances of verbal agreement in illustration.

Pike.

"And now let us ask, Are the English a fair-haired people? Can it be said that 90 per cent. of them are fair-haired? Most certainly not." P. 132.

"The second hypothesis is, that a preponderance of Cymric blood in the invaders, who came from the Cimbric Chersonese and its neighbourhood, may have caused, wholly or in part, that resemblance which is to be traced between the ancient Britons and the modern English." P. 243.

"To Greek and Roman eyes, the Germans did certainly appear, in general terms, to be all light-haired. There is no evidence whatever on the opposite side. But if we suppose the Greeks and Romans to have been generally dark-haired, and to have regarded fair hair as a rare and very great beauty, they would necessarily have been very much struck by a proportion of light hair among the Germans, greatly in excess of that which they found among themselves." P. 138.

"As in the case of the Germans, so in the case of the Celts; we must believe no more than that the eyes of the Romans and Greeks were struck by the greater proportion of fair hair among the Celts than among their own people. But there is reason to believe that they were less struck

Nicholas.

"But now comes the question, Do the English people, who are said to have descended from those ancient Germans, display these same characteristics of race? Are they prevailingly blue-eyed and red or yellow-haired?" Nothing of the sort. P. 506.

"We do not question but that this junction may, to some extent, have taken place in the Cimbric Chersonese; probability lies strong in favour of such a supposition." P. 522.

"Let us premise that it is more than probable that the Greeks and Romans, to whose writers we are indebted for certain minute descriptions of the personal characteristics of the ancient Teutons and Celts, were themselves of a prevailingly *dark* complexion. Hence it is that, according to the usual rule of setting a high value on that which is rare, they took especial notice of the light or 'yellow' hair of the Germans, and of the less light hair of the Gauls and Britons, as a feature of *comeliness*." P. 502.

with this phenomenon among the Celts than among the Germans." P. 147.

"That dingy hue, neither light nor dark, which is very common among Germans." P. 139.

From p. 158 to p. 178 Mr. Pike discusses skull-forms.

From p. 172 to p. 176, Mr. Pike considers the Greek head-form, because it illustrates some of his previous and subsequent arguments.

"It is a dingy tan, produced nowhere but under the German sky." P. 505.

Dr. Nicholas gives an abstract (without acknowledgment, of course) of Mr. Pike's argument. He further goes out of his way to remark that Greek heads are of the same class of form as the Celtic, though the form of the Greek head has no bearing upon his final conclusions. P. 519.

Mr. GROVE went on to remark that, in addition to the piracy of whole sections of the book, the defendant had filched a number of arguments and illustrations, which he had scattered about in various portions of his printed work. He dwelt especially upon an instance of this in the preface, where each author quite unnecessarily goes into a discussion, and takes exactly the same view of the question of classical orthography. Of still greater importance, however, was the fact that Dr. Nicholas had copied Mr. Pike's blunders.

The following parallel passages were important in many ways:—

Pike.

"Livy, too, describes the Gauls as having *rutilatæ coma* (reddened hair, or hair made light), not *rutilæ coma* (reddened hair)." P. 148.

Nicholas.

"Livy writes that they [the Gauls] had not *rutilæ coma* (red hair, but *rutilatæ coma* (reddened hair))" p. 514, and again, p. 515.

In this last passage, both plaintiff and defendant appeared to have fallen into a very remarkable error. Both gave Livy as their authority; but Dr. Nicholas had omitted to mention Livy in his list of authorities. The passage in question was a speech of Cn. Manlius, intended to encourage Roman soldiers who were about to engage the Galatians. "The Galli," he says, "have the most warlike reputation of all the Asiatics. They may have the *rutilata coma*." But, he goes on to explain that wherever a colony has settled under similar circumstances, it has been absorbed by the native population. "These men," he says, "are no exception; they are a mixed breed and degenerate; they were but Phrygians with the arms of Gauls." They did not, therefore, prove the point which both Nicholas and Pike were attempting to prove.

There was an excellent instance of copied blunder, and of blunder aggravated by copying, in Nicholas's list of works consulted (p. 9); he had "Blumenbach (J. Fried.) *Decades Craniorum*, Göttingen, 1828." (Mr. Pike had in his list of works consulted (p. xv), "Blumenbach (Johann Friedrich) vi *Decades et Nova Pentas Craniorum*, Göttingen, 4to, 1828.

There were no *Decades Craniorum* published by Blumenbach in 1828. In order to divert suspicion, Dr. Nicholas had omitted the *Nova Pentas* from his list, and this, strangely enough, was the only portion of Blumenbach's collection published in 1828. The *Decades*, to which alone Dr. Nicholas refers, were published at intervals ranging between 1790 and 1820. Mr. Pike, in giving the date of the whole collection (including the *Nova Pentas*), ought

to have written 1790-1828. Dr. Nicholas (excluding the *Nova Pentas*) ought to have given the date as 1790-1820. He was content to copy Mr. Pike, and went entirely wrong. Even in writing the author's name, Dr. Nicholas had copied an inaccuracy of Mr. Pike's. The work is in Latin; the titlepages of each decade are also in Latin, and the author's name appears thus,—“Jo. Frid. Blumenbach.” Mr. Pike gave the name in German,—“Johann Friedrich”,—not according to the titlepage. Dr. Nicholas likewise introduced the letter *e* into the second name, after the German fashion, and wrote it “J. Fried.”

There was another instance of a blunder of the Plaintiff copied by Dr. Nicholas at p. 498. He referred vaguely to “Our Population Abstracts”, published by direction of government; while Mr. Pike referred to “The Population Abstract” published in 1843 (Census 1841).

Mr. Pike, though he neglected to ascertain the results of the census taken in 1851, and of that taken in 1861, nevertheless carefully expressed himself in the past tense [“were born”]. Dr. Nicholas, however, in the hope of concealing his plagiarism, had changed the tense [“are born”]; and thus, by referring to “Population Abstracts” in general, implied that he had consulted those of more recent date. Now, had he looked at the return of the Census taken in 1861,—which is easily accessible, far more easily than that of the Census taken in 1841,—he would have been under no necessity to take the counties of Surrey and Middlesex, but would have found a table (to which reference is made in the Contents) giving the percentage of those persons inhabiting London who were born in London itself.

Mr. GROVE then commented on the case as a whole. He said it was a case of cumulative circumstantial evidence,—a case in which all the circumstances fitted into one theory, and could not be made to fit into any other. There was exactly the same plan, exactly the same line of argument, exactly the same illustrations, and, in many cases, an exact agreement in verbal expression. The chances against these coincidences having occurred, independently of any plagiarism, were so great that they might be held to amount to absolute certainty. It only remained for him to call witnesses in support of what he had alleged.

Mr. LUKE OWEN PIKE, the Plaintiff, a Vice-President of the Anthropological Society, was the first witness, and was examined by Mr. Jemmett. He confirmed the statements made in Mr. Grove's opening address, and gave a history of the manner in which he wrote his book, and in which he arrived at his conclusions. He had traced back all the assertions concerning the destruction of the ancient Britons to Gildas; had formed the conclusion that Gildas was not a contemporary author, and was, for various other reasons, untrustworthy, and he had quoted Mr. Hardy for some of the facts upon which his conclusion was based. Having but little faith in philology as an index to race, he had fallen back upon physical and psychical characteristics. He had devoted much labour, time, and expense in collecting evidence for his argument from physical characteristics, which, whatever might be its value, he believed to be original. He had paid special attention to the colour of the hair and the form of the skull. He had, from his own observation, compiled a table of hair-colours by a peculiar method of his own. The table appeared at p. 134 of his book. The defendant had given a similar table, very closely agreeing with his, at p. 507 of the defendant's book. He was decidedly of opinion that the defendant could not have observed the numbers given by him in the manner stated by him, and he certainly could

not have done so himself. He believed his argument concerning the hair-colour of the English, considered in relation with the hair-colour of the ancient and modern Teutons, and of the ancient and modern Celts, to be original. He believed his argument concerning the skull-form of the English, in relation with the skull-forms of the ancient and modern Teutons, and of the ancient and modern Celts, to be original. He had arrived at it by a long process of sifting evidence, which was very contradictory. He had not only read a number of works on the subject, but he had made independent observations and measurements of his own, especially at Netley Hospital. [His instruments were produced in court.] He obtained considerable information from various hatters. Except where he had made acknowledgment, all the statements in his book were the result of his own observations or inference.

Mr. PIKE then went on to give evidence concerning the state of the Defendant's MSS. when first produced, in obedience to the summons, and the alterations subsequently made in them. In the MS. essay of 1865 he said, there were missing at that time pages 5-8, 71-166, and 309-322, which had recently been produced. In the MS. of 1866, from which the Defendant printed, the passage concerning Gildas was missing when the book was first produced; and it appeared that the MS. had since that time been taken to pieces and rebound. The passage in question, as recently introduced, was paged in a different way from the rest of the book, the numbers of the pages not running in regular order. The corresponding catch-words, "Gildas examined," in the table of contents were interlined. In the essay of 1865, so far from Gildas being criticised as the original authority, there was a statement that "Gildas copied Bede," Gildas having in fact lived a century and a half before Bede. [The Defendant's MS. and his rough draft containing the same statement, were handed up to the Vice-Chancellor.]

Cross-examined by MR. KAY. Mr. PIKE repeated that he had prepared materials for his work before the appearance of the advertisement issued by the Eisteddfod, and in particular that he had made notes upon Celtic philology as early as 1858 and 1859. He had copied them into his note-book produced; and other rough notes bearing upon the subject, and made at various times, had been pasted into the same note-book at the time of the appearance of the advertisement. In addition to the copy of the Defendant's prospectus sent to him by Mr. Blake, he had received one from Dr. Nicholas himself, but only after an interval of several days, and after he had spoken to a great number of persons on the subject. He repeated his statement concerning the way in which he arrived at his opinion concerning Gildas; he had looked into all the histories of England in his own possession, and all which he could find at the Museum, and traced back the statements concerning the extinction of Britons to Gildas; he always found either that Gildas was mentioned by name, or that Gildas's statements were adopted. The names of all these histories were not given in his list of authorities simply because the principle on which he had compiled that list was to give the books in which he had found information, and not those in which he had failed to discover any. He had acted on the same principle throughout.

Mr. KAY then asked a number of questions, of which the object was to show that all writers on anthropological subjects treat the subject in the same way. Mr. PIKE's replies were to the effect that there are several different schools of anthropology, some of which put aside physical characteristics altogether; and that even those which accept the evidence of physical character-

istics differ in their estimate of the value of hair-colour and skull-form. Prichard, for instance, had an opinion entirely different from his own of the value of such indications.

Mr. KAY wished to know which of the books in Mr. Pike's list had been consulted for the purpose of discovering the evidence of physical characteristics. To this Mr. PIKE replied, that he was quite willing to go through the whole list, and describe precisely what use he made of each work in it, but he objected to giving a selection merely from memory. This offer, which was repeated, Mr. Kay did not accept. Asked whether he had not found the idea of getting information from hatters in Professor Wilson's paper, published in the *Anthropological Review*, he pointed out that the paper in question appeared in 1865, while the letters from the hatters, produced in Court, bore the date 1864. After seeing Professor Wilson's paper, he added a note to what he had previously written, and mentioned this agreement in method, with Professor Wilson's name, and the note appeared in his book as printed. Mr. Pike was then cross-examined at great length concerning the absence of the criticism of Gildas from the 1866 MS. of the Defendant. He persisted in his former statement that it was missing when he first saw the MS., and that it had since been bound in. He produced a note to the effect that the passage concerning Gildas was wanting, and he was very positive in stating that this note was made at the time of the first inspection.

Re-examined by MR. GROVE. Mr. PIKE again repeated all that he had said concerning the pages missing, both from the MS. of 1865 (about which there was no dispute) and from the MS. of 1866. Mr. Grove read the letters from the hatters to Mr. Pike, which contained some very curious information, and were admitted as evidence of the labour bestowed by Mr. Pike upon that branch of his subject. He elicited that no notice had been given to Mr. Pike, or his solicitors, of the restoration of any of the missing pages.

Examined by the VICE-CHANCELLOR. Mr. PIKE said he was acquainted with French, German, the classical languages, and, to some extent, with Welsh. He had consulted the Myvrian Archaiology of Wales in Welsh.

The next witness was Mr. RICHARD STEPHENS TAYLOR, Junior, one of the Plaintiff's solicitors. He corroborated all that Mr. Pike had said concerning the absence of the section on Gildas from the Defendant's MS. of 1866, and concerning the absence of a number of pages from the MS. of 1865 at the time of the first inspection. He added that when he applied for a second inspection he was told, by Dr. Nicholas's solicitors, that the MS. had been sent back to the Defendant for him to prepare his brief.

This concluded the first day's evidence (April 27th).

On the second day the first witness called was Dr. JOHN BEDDOE. Examined by Mr. GROVE, he said he was President of the Anthropological Society of London, and a corresponding member of many foreign learned societies. He had for many years given his attention to anthropological science. He had read Mr. Pike's book, and considered the criticism of Gildas in it to be original. He had examined the tables of hair-colour in Mr. Pike's book and compared them with those in Dr. Nicholas's; he had found so very close a resemblance between the tables in the two books, in their proportions, that he did not think they could have been drawn up by two independent observers. Different observers differed extremely in their ideas about colour; he had proved that by setting different people to work on the subject. He did not believe that Dr. Nicholas, who was a very short man, could have collected eleven thousand instances in twenty assemblages. There were great

physical difficulties in the way, both by day and by night, both in-doors and out-of doors; he had himself collected as many instances but had been a very long time about it, though he had very keen sight. He had written several papers on the subject of hair-colours, but those which had been quoted by Mr. Pike were precisely those which were quoted by Dr. Nicholas, and those omitted by Mr. Pike were omitted by Dr. Nicholas. Two of these neglected papers were of at least equal importance to the subject with those referred to.

Cross-examined by Mr. KAY. He said that he had formed the opinion that Mr. Pike's criticism of Gildas was original from a considerable amount of reading on the subject, and he had himself written an essay on the Origin of the English. He was aware that Gibbon and others had discredited Gildas, but not for the same purpose nor by the same arguments as Mr. Pike. He considered his own method of tabulating hair-colours statistically was original. Prichard had vaguely recorded some of his impressions, but had given no figures; no one had previously made observations of any value for the purposes of science. It was very difficult to arrive at any result in-doors, owing to the variety of shades in different parts of the room. A man in a pulpit might be better than another, but a man in a pulpit had something else to do besides observing heads of hair; the value of the evidence of hair and skulls in ethnological investigations was a matter of opinion. Writers of the philological school rejected that evidence altogether, but he thought they were wrong.

Re-examined by Mr. GROVE. He said again, he thought Mr. Pike's criticism of Gildas was original, and he thought the Defendant's criticism was substantially the same. He thought the course of argument in Mr. Pike's book, and the deductions from the colour of the hair, the form of the skull, and their relations to the proportion of the British and Saxon people in England were original, and they differed considerably from his own opinions. He found the same course of argument in the Defendant's book.

Examined by the VICE-CHANCELLOR. He said he could take down all the instances of hair-colour which it was possible to take in the court in a very few minutes, but the difficulty of light was so great that there were very few instances which he could take down at all.

Mr. CHARLES BLAKE, examined by Mr. Jemmett, said he was Lecturer on Comparative Anatomy at Westminster Hospital, and had been Hon. Secretary of the Anthropological Society. He had received a copy of the defendant's prospectus in July, 1867, and immediately called Mr. Pike's attention to it in a letter, enclosing the prospectus itself. He saw the defendant's book on his return from abroad, in July, 1868. He had given attention to the subject of the two books for many years. He had not seen Gildas treated in a manner or with phraseology similar to that of Mr. Pike anywhere except in Dr. Nicholas's book. He had given his attention more especially to the subject of physical characteristics, and had pointed out in a review of Mr. Pike's book in the *Medical Times and Gazette*, that there were many authors whom Mr. Pike might have cited, but had omitted to cite in proof of his conclusions. Those were precisely the works omitted by the defendant in his list of authorities, and there was no reference to them anywhere in the defendant's book. The works referred to by the defendant were precisely the works referred to by the plaintiff. Mr. Pike's argument from the skulls was novel at the time at which it appeared, and not only the train of argument, but the generalisations upon which it was founded con-

cerning the shape of Celtic skulls. The identification of Greek with Celtic skulls was also novel. To all this he had observed a great resemblance in the defendant's book, even to the point of the Greek skulls, and an absolute identity in the phraseology. As regarded the defendant's tabulation of 11,000 hair-colours in twenty assemblages he had tried the experiment; and he believed the thing to be impossible. There was a plate in the defendant's book with representations of four skulls; they gave him the impression that they had been put there by a person unacquainted with the subject; they had been taken from two elementary works; and the four skulls were drawn in three different positions, so that any comparison between them was utterly impossible.

Cross-examined by MR. OSBORNE MORGAN. He was acquainted generally with Gildas; and the arguments on that subject of the plaintiff appeared to him new; he was not in the habit of reading the *Saturday Review*, nor was he acquainted with MR. HARDY'S works. Both the plaintiff and the defendant discredited Gildas, and they both used a certain phraseology in discrediting him. He believed the fact that the modern English possess long skulls was first established by the plaintiff, and that the plaintiff had first combined the propositions that the Celtic skull was long, that the Teutonic skull was short, that the modern English skull is long, and that, therefore, the English are descendants of the ancient Britons. That was perfectly new.

Re-examined by MR. GROVE. There were ten different heads in the defendant's book which agreed with ten heads in the plaintiff's book. He found them put in the same way, and bearing on the same subject in the same way; and the phraseology, if not agreeing letter by letter, was substantially similar.

THE VICE-CHANCELLOR. "You have been in the habit of writing on the subject?"

MR. BLAKE. "I have."

THE VICE-CHANCELLOR. "You have been in the habit apparently of writing reviews upon works?"

MR. BLAKE. "I have."

THE VICE-CHANCELLOR. "Supposing these two books were put in your hands for the first time, with your experience as a writer and a reviewer, would you come to the conclusion that one was borrowed from the other, or that both were borrowed from a common source? One of these two hypotheses must be true."

MR. BLAKE. "I should say that one was certainly borrowed from the other."

THE VICE-CHANCELLOR. "The other hypothesis is that they might be both borrowed from a common source."

MR. BLAKE. "That hypothesis would be impossible to my mind."

MR. JEMMETT then addressed his Honour on behalf of the plaintiff. He said after the opening of his learned leader he would not occupy much of the time of the court. But there were one or two points which would add weight to the great mass of cumulative evidence already brought to bear upon the subject. His Honour had seen how DR. NICHOLAS was so ignorant of the first duties of a historical critic in 1865 that he actually supposed Gildas lived after BEDE and copied him, while the scope of his criticism, as published, was to show that BEDE copied Gildas, and was, therefore, not to be trusted. But DR. NICHOLAS had never even made this criticism his own; it was in direct contradiction to other parts of his book where he quoted Gildas, BEDE,

and Nennius as trustworthy authorities. Even the quotation from Mr. Hardy, which appeared in both books (and which threw discredit on Gildas because he gave a wrong account of the abandonment of Britain by the Romans), had never been understood, but had been blindly copied by Dr. Nicholas. The mistake of which Gildas was there accused was that he had represented the Romans as finally abandoning Britain in A.D. 383, under Maximus, whereas, in fact, they did not really leave until the year 410, under Honorius. Now, not only had Dr. Nicholas taken the assertion of Gildas as correct, but he had, in a part of his book not copied from Mr. Pike, shown that he supposed Maximus to have been a contemporary of Honorius, and to have left Britain in the year 410, whereas Maximus had, in fact, died in the year 388. There could be no stronger proof that Dr. Nicholas had, in implicit reliance upon Mr. Pike, copied a criticism which he did not in the least understand. Mr. Jemmett then proceeded to read some parallel passages in addition to those already cited by Mr. Grove. He also pointed out that Dr. Nicholas's table of hair-colours for London was simply a multiple of Mr. Pike's percentages. The number used as multiplier was 60. Dr. Nicholas had divided one of Mr. Pike's classes into two, had disregarded the decimals, or rather substituted more convenient fractions, had then multiplied by 60, and by that very compendious process had saved himself a considerable amount of labour at Mr. Pike's expense.

Mr. KAY, in opening the case for the defence, complained at great length of the manner in which the plans of the two books had been drawn out side by side in the bill. He was, however, repeatedly interrupted by the Vice-Chancellor, who said that the bill was correctly drawn, that it gave notice to the defendant of what was alleged against him, and that it was idle to suppose that a Judge's mind could be unfairly influenced by that mode of stating the case. Mr. Kay then complained that no notice had been given to his client of the precise passages which were said to have been pirated, and he was dilating on this point when the Vice-Chancellor again interrupted him, saying,—"If you really mean to say that you have in any way been taken by surprise, the case shall be adjourned."

Mr. KAY referred the matter to Dr. Nicholas, who preferred to go on. He then resumed his argument, which was to the effect that all the passages alleged to have been pirated were, with the exception of the criticism of Gildas, written before the defendant had seen the plaintiff's book, and that Dr. Nicholas would establish this by his oath. He argued, however, that, supposing even Dr. Nicholas had had a number of ideas suggested to him by Pike's book, there was no piracy involved. Copy-right meant the right of producing copies, and there was no copy-right in arguments or ideas. But he would go further than this, and say that an author, not only had the right but was bound by his duty to his readers, to consult all preceding works on the subject on which he was writing. He then proceeded to cite cases with a view of showing that any author might take new heads of argument, and the arguments themselves from another work without any infringement of copy-right. He argued that Mr. Pike must have been mistaken in his assertion that the section on Gildas was missing from the MS. of 1866, and mistaken also in the time at which he made a note to that effect. The absence of the leaves from the MS. of 1865 was admitted, and would be explained by Dr. Nicholas. With respect to the criticism of Gildas itself, he denied that the alleged similarity existed between it and Mr. Pike's criticism. The verbal resemblances relied on by the plaintiff he said were not verbal

resemblances at all, and the passages quoted in common were open to one author as well as another. In the same way, he said, all the other verbal resemblances in the two books, if they could be called resemblances, were the result of chance. [As we have already given some of the passages in parallel columns without Mr. Grove's remarks upon them, it is hardly necessary to give Mr. Kay's remarks upon them. They must speak for themselves.] With respect to the copied mistakes, Mr. Kay said there was no error which two authors might not have fallen into independently. As for the expression, "rutilatæ comeæ not rutilæ comeæ," he did not think Dr. Nicholas implied that the whole expression occurred in Livy. It was a very natural distinction for two authors to draw. As for the confusion between the Gauls and their degenerate descendants, it was hardly to be called a mistake, and was, if a mistake at all, one which two independent authors might very naturally fall into. He did not see that any copied error had been made out in the case of the population abstracts. What had been done was just what anybody might do. Nor could he see that any error had been copied in the description of Blumenbach's work. He believed he should be able to show that the whole collection of skulls was known by the name of "Decades," and that Dr. Nicholas had arrived at his description in the course of his reading. He submitted that there was no case for the interference of the court. It was true his learned friend Mr. Grove had mysteriously hinted at something which had not yet been brought forward, but he hoped if any new matter really remained to be introduced, he should have the opportunity of replying to it.

Dr. THOMAS NICHOLAS, examined by Mr. Osborne Morgan, said he was a Doctor of Philosophy of a German University, was a Welshman by birth, and conversant with the Welsh language. He was educated at the Lancashire College, and brought up for the ministry of the English Independents. He had for seven years filled the chair at Carmarthen College, where he was Professor of Mental and Moral Science, of Ecclesiastical History, of the German Language, and of General Literature. As Secretary to the proposed Welsh University, he had been in the habit of addressing public meetings. He said the pages at first missing from the MS. of 1865 had been torn out by him in order that his luggage might be light when he was travelling about, and composing his essay of 1866, which was written principally while he was moving from place to place. The loose pages after being used were put into a box at his house at Carmarthen before the competition of 1866, and the box was never opened until recently, when the pages were discovered in it quite by accident and replaced in the book. The rough-draft book D, which contained the evidence of physical characteristics, and the table about which so much had been said, had been written before the end of 1865. He wrote his second essay with a view to publication, and intended to publish it, whether it obtained the prize or not. He finished it on the 13th June, 1866, but did not send it in until the 2nd of July, the last day appointed. He never heard of Mr. Pike's book until September, 1866, when he saw an advertisement of it in the *Saturday Review*, and he bought a copy of it in the following October. He did not get his MS. back from the Secretary of the Eisteddfod until early in that month, and left it with Professor Max Müller on his way up to London. It was afterwards sent to Dr. Rowland Williams and Dr. Davidson. No alterations or additions were made in it before it was sent to those gentlemen. He did not get it back from them until July, 1867, when he sent it to the Rev. Enoch Mellor, who kept it a month longer.

He published his book in March, 1868. He then went through the whole of the MS. from which his book was printed, stating what were the additions since it was sent in to the Eisteddfod. These were not important in the case except in the one instance of the criticism of Gildas, which Dr. Nicholas said he had substituted for a long note. But this section on Gildas was in the MS. book when first produced in obedience to the summons. No alteration had been made in the book or in the binding since that time. He sent a copy of his prospectus to Mr. Pike among the first, and a note of which he had not preserved a copy. He had made no alterations in the leaves of the 1865 MS. which had been torn out.

At this point the court rose.

The hearing was resumed on the 30th April, when

Dr. NICHOLAS proceeded to say that he had taken the title of the "*Decades Craniorum*" from Gliddon's *Types of Mankind*. In dealing with Gildas he referred to no book particularly except Hardy's *Monuments* and Gildas' own works. He first saw the passage quoted by him from Stevenson in Hardy. He did not take a single word about Gildas from the plaintiff's book.

[At this juncture a copy of Bohn's translation of Gildas was handed to Mr. Jemmett by Mr. Pike.]

Dr. NICHOLAS then said, "Will you allow me to make a remark: I found the passage from Stevenson in the preface to Gildas's works in Bohn's edition. I afterwards referred to Stevenson's own volume, and found it out."

He had made the note about population abstracts from his own reference to the Census Returns of 1861.

With respect to the table of hair-colours, he said, he compiled it by counting heads in public assemblies. He first saw the passage from Livy which contains the words "rutilate come" in Prichard; Retzius was his great authority on the question of skulls. The idea of comparing the Greek with the Celtic skull was suggested to him by Lyell. Upon being asked again, he said it was suggested to him by Prichard.

Cross-examined by MR. GROVE. Dr. NICHOLAS said, that he could not recollect to what places he went when he tore the leaves out of his MS. book, except that he was at Carmarthen. He had written a very large portion of his book while on his travels to places of which he could not recollect the names; he was chiefly at Carmarthen. He could not recollect the names of places where he wrote portions of his work, and none of the passages recalled to mind the places where they were written. He could not recollect where he was before he went to Carmarthen. He could not tell, even approximately, the time when he tore the leaves out, nor where he went with them, nor where he used them. He had a house at Carmarthen.

[The MS. of 1866, from which he printed, was handed to him, and he was requested to look at the Table of Contents of Chapter V, and say when the alterations in it were made.] He said they were made, as far as he could recollect, before the Essay was sent in. The word erased under the words "Mental and Moral" was "Psychical." He did not know that it had been partly erased with a knife. He could not make out that the head of the P and the tail of the y had alone been erased with the knife, or some such instrument; it might be so, but he could not make it out. He was quite certain the word erased was not "Psychical," because he had an objection to it and never used it. Whatever the word was he could not say why it was so much more elaborately erased than any other word in that or the adjoining pages. He could not tell why there were certain considerable alterations

made in the rough draft of his table of hair-colours, nor where he was when he wrote those tables. When he made the calculations at the twenty assemblages mentioned by him, he did not put the numbers down at the time but put the numbers down on slips of paper, and used them afterwards. He had not got any of these slips of paper. He had not mentioned any of those matters in his diary. At each assembly he put down the numbers present and the numbers of each colour as a total, but did not jot down each individual. He could not say when he first consulted Hardy's *Monumenta*, nor when he first consulted Retzius. He had a copy of Retzius in Court. He could not say exactly when he got it. He had not had it long, but would be very glad to say how long if he could. He believed he had got it this year; though he was now in the month of April he could not say whether he got it in January, February, or March. He got it from Germany, through Nutt in the Strand. He could not say what copy he consulted before he got his own; it was rather a common book. It could be purchased in this country. Mr. Nutt had not one in his stock. He did not know that he had applied to any other bookseller. He was not sure where he consulted the copy of Retzius to which he had referred in his book, very possibly at the British Museum, but he could not say. He could not give a reference to a single copy of Retzius in the British Museum, or any other place or library, except that which he purchased this year. He had consulted an original copy of Retzius somewhere.

Mr. GROVE. "Will you swear that?"

The VICE-CHANCELLOR. "I do not like that form of question."

Mr. GROVE. "I do not doubt it is objectionable."

Dr. NICHOLAS continued by saying, he could not state that he took those particular items from Retzius, though he had consulted the work. He had no doubt he had sought for Retzius at the British Museum.

The copy of Pouchet, mentioned in his list of authorities, he had had himself, but could not say when he got it, even approximately. He thought he first consulted it in the Anthropological Society's Library. He was not quite sure whether he took it away with him, but had consulted it at the British Museum a long time ago. Of that he was quite sure, but he could not say for certain that he had seen it at the Anthropological Society's Library. Asked more precisely about the French Edition of Pouchet published in 1864, which was the edition mentioned in his list of authorities, he said he fancied he saw it at the British Museum. He was not sure about it. The edition of Pouchet in his own possession was the translation published by the Anthropological Society. He had not got the French edition of 1864. He believed he had seen it somewhere, but could not say where.

The only passage of Livy quoted by Prichard, containing the words "*rutilatae comae*," was in vol. iii, pages 195-6; that described the Galatians, and Prichard accepted it as evidence that they were naturally of xanthous complexion. He had not meant to say that either he or Mr. Pike took their theories from Prichard, only that the passage was quoted there.

He had not had many books from the Anthropological Society's library. He had had the *Anthropological Review*. He had not, to the best of his recollection, had any books from the library except the *Anthropological Review*. He was not quite sure that he had ever consulted a book in the library. He had been in the library and looked at the books, but could not say that he had spent any time in consulting them.

Mr. GROVE. "You cannot tell me that you ever consulted a book."

Dr. NICHOLAS. "I think the library, on the whole, is a very defective one."

The VICE-CHANCELLOR. "Do not make observations; confine yourself to evidence."

Dr. NICHOLAS in continuation stated, that he could not say when or where or from what copy of Gliddon he took the description of Blumenbach's "Decades." In the passages quoted from Gildas he had taken the translation of Bohn. He had done so because he felt diffident of translating the Latin himself.

Re-examined by MR. KAY. Dr. NICHOLAS said that the word "Psychical," or "Psychological," or whatever it was, that had been erased, was not copied from Mr. Pike's book. The erasure had been made before the Essay was sent in for competition. A note made by Dr. Rowland Williams in pencil on the page about "rutilatæ come," had been made when the MS. was sent to him after the Eisteddfod of 1866.

Dr. ROWLAND WILLIAMS examined by MR. KAY, said he was a Doctor of Divinity of the University of Cambridge, and vicar of Broadchalke. He had directed his attention to early English history, and had read a paper before the British Association on the Silurian types. He was very slightly acquainted with Dr. Nicholas. Dr. Nicholas's MS. was sent to him late in 1866. He had made no note of the date, but had been told it was in September or October. It was in his possession a few weeks when he returned it to Dr. Nicholas, but he could not give the exact date at which he returned it. He gave it a fair amount of perusal. He wrote the note in pencil while the MS. was in his possession. He believed the MS. to be substantially the same as when he saw it, but the part about Gildas had been added. He thought there had been a note about Gildas before, but could not swear to it positively. Mr. Pike had not spoken of Gildas as being a "monk," and Dr. Nicholas had. He had not only an impression that Dr. Nicholas had not taken his criticism from Mr. Pike, but he spoke positively on the point. He had not instituted a critical comparison between the two books, but had formed an estimate of them. He would like distinctly to state that as regarded the bulk and body of Dr. Nicholas's volume, and he thought a perusal of the two books would show—

MR. GROVE objected. He said he could have produced plenty of evidence of this kind on his side.

The VICE-CHANCELLOR. "It may arise out of a question which I think I ought not to have asked. I did ask Mr. Carter Blake a question which probably I ought not to have asked, as to what his judgment would have been as a person accustomed to reviewing."

Cross-examined by MR. GROVE. Dr. Williams said he could not swear to the month in which he saw Dr. Nicholas's MS. Mr. Pike had spoken of Gildas as exercising some ecclesiastical function, but that was not the same thing as being a monk. Gildas was generally considered to be a monk. He was a monk if he was the same person as Aneurin. There was much dispute about him.

REV. DR. DAVIDSON, examined by MR. MORGAN, said he was a Doctor of Law and Divinity. He had no great knowledge of the subject matter of the two books. Dr. Nicholas's MS. was sent to him in January, 1867, and he kept it three months. It was substantially the same MS. as that which was produced in Court. There was a note in it about Gildas, but of what length he did not know. Hardy was quoted in it. He had not read the section on Gildas in the printed book.

Cross-examined by MR. GROVE. He was intimately acquainted with Dr. Nicholas, who had written on his behalf on a controversial matter.

Mr. SAMUEL KINGSLAND SHERBORN (a printer) identified the pages on which the criticism of Gildas was written as those from which the corresponding pages had been printed.

Mr. CHARLES REYNOLDS WILLIAMS (one of the Defendant's solicitors), said he could identify the pages on which the criticism of Gildas was written as having been in the MS. when it was first brought to his office. He had been told that the passage had been added since the Essay was sent in for competition in 1866, and for that reason had written the word "Interpolation" in the corresponding part of his printed book.

This closed the case for the defence.

Mr. OSBORNE MORGAN, M.P., summed up on behalf of the Defendant. He said Dr. Nicholas's criticism of Gildas, about which there had been so much discussion, was not identical with that of Mr. Pike, and that, in point of fact, every one who took the views of Mr. Pike and Dr. Nicholas must of necessity discredit Gildas. It was true that both had cited common passages from Gildas himself and from Mr. Hardy, but there was no piracy in that; and the view taken of Gildas's character was not precisely the same, for "splenetic" was not the same thing as "melancholy," and Mr. Pike had not used the words "ignorant and prejudiced monk." And this criticism of Gildas was every thing of importance which had been written since the Defendant had seen the Plaintiff's book. The sections on hair-colour and skull-form had been written, as Dr. Nicholas had sworn, before he had even heard the name of Mr. Pike. He did not know whether his learned friend Mr. Grove intended to impute the most flagrant perjury to Dr. Nicholas, but, if not, the case was fully answered. He would not, however, rely solely upon Dr. Nicholas's evidence; he would deal with the case upon its merits. He argued, like Mr. Kay, that an author might take heads of argument, arguments themselves, ideas, illustrations, and references second hand from another author. None of these things constituted piracy, but he could not see that Dr. Nicholas had done them or any of them, and the instances of verbal similarity were not sufficient to support the case, as his learned leader had already pointed out.

The VICE-CHANCELLOR here remarked, "But you have not yet explained away that passage about '*rutilatæ comæ*, not *rutilæ comæ*.'"

Mr. MORGAN said, the quotation from Livy, if not the comments on it, was to be found in Prichard, and he could not see that a mere resemblance in the wording of the comments would go far towards convicting Dr. Nicholas of piracy. And even allowing that Mr. Pike's book came out on the 31st of May and that Dr. Nicholas's was not sent in for the competition until the 2nd of July, it was impossible that so large a MS. could have been written in the time. It had been shown that the MS. had been sent after it was returned from the Eisteddfod to Professor Max Müller, and then to Dr. Rowland Williams and other gentlemen; and Dr. Rowland Williams had identified his own note made then upon the very passage concerning the "*rutilatæ comæ*." If the copying had been done at all it must have been done at some time or other, but he submitted that there was no time at which it could have been done. The evidence of copied blunders had failed; for it was not a blunder to regard the Galatians as Gauls, the Galatians having been of Gallic descent. There was no point in the alleged mistake about the Population Abstracts. The mode in which the description of Blumenbach's works had been given had been explained, and nothing was left except such similarities as would necessarily occur when two authors, writing upon the same subject, took the same view.

The identity of conclusion was easily explained by the fact that no essay would have any chance at the Eisteddfod if it took any other view than that the English were Britons.

It was nearly half-past two when Mr. GROVE rose to reply. He said the case had assumed a most disagreeable aspect. His learned friend on the other side had used the *argumentum ad perjurium*, which, if it were pushed to its extreme limits, would place the plaintiff in any suit at the mercy of an unscrupulous defendant who chose to swear that he had not committed the acts imputed to him. Unfortunately a conflict of testimony was becoming the rule rather than the exception in every trial; but, however lamentable that fact might be to the moralist, it was an indication that the word of a defendant was not under ordinary circumstances to be accepted as a sufficient answer to a specific charge supported by numerous converging trains of circumstantial evidence. In this particular case he would ask his Honour to recollect the demeanour of Dr. Nicholas in the witness-box. He was not bringing a criminal charge against Dr. Nicholas; he was simply answering his learned friend's *argumentum ad perjurium*, the argument that every word spoken by Dr. Nicholas must be considered true, because to doubt it was to make an accusation of perjury. He submitted that such an argument as this would be of no value, even if there were no conflict of testimony; but there actually was a conflict of testimony concerning the condition of the defendant's 1866 MS. when produced at the solicitor's office. The plaintiff and his solicitor had both distinctly sworn that the section entitled "Gildas examined," did not form a portion of that MS. when first produced, but had been inserted at some time between last summer and the time of the trial. The defendant and his solicitor, on the contrary, swore that no change had been made in the MS. since its first production. It was for his Honour, who had had an opportunity of comparing the demeanour of the plaintiff with that of the defendant, to judge of their respective credibility. There was, without doubt, some difficulty in discovering a reason why the MS. from which the section "Gildas examined" was printed should not have been produced at first, especially as it had been admitted that the section in question had been written after Dr. Nicholas had seen Mr. Pike's book. His (Mr. Grove's) theory, however, was that there had been a change of tactics. He thought Dr. Nicholas had not at first liked to produce the MS. written on different paper from other parts of the book, written on both sides, and showing the marks of interpolation in the paging. But, upon reflection, it might have occurred to the defendant that the absence of the pages would be most damaging, while their presence, together with a confession of the time at which they were written, would have an air of frankness which might be beneficial. For this reason, and perhaps, too, in the hope of discrediting the plaintiff, they were restored. But the fact remained that Mr. Pike had looked specially for that passage in the MS., had discovered the place in which it should have appeared, had identified that place by the side-note abruptly broken off, had made a note at the time that the passage was missing, and had been confirmed by the testimony of his solicitor who went with him to inspect the MS. In confirmation of his theory respecting the change of tactics, Mr. Grove then proceeded to comment upon the glaring contradiction between the statement made on oath by Dr. Nicholas in his answer to the bill, and his statement on oath in the witness-box concerning the addition of "Gildas examined" to his work. In

his answer he swore that the whole of the published work was, with the exception of some philological tables substantially the same as that which he sent in to the Eisteddfod in 1866. In the witness-box he admitted that the whole of the criticism of Gildas had been written long after that time, and this very criticism had formed a most important feature in his prospectus issued to attract subscribers. As regarded the credibility of the witness, said Mr. Grove, the facts spoke for themselves.

Passing for the moment from the MS. of 1866, to the MS. of 1865, Mr. Grove quietly remarked that, in a suit in which there were so many curious coincidences of a wholly fortuitous nature, it was hardly a matter for wonder that the 125 pages missing, when the summons for documents was issued, should have been discovered, without any search on the defendant's part, before the trial came on. In this case, at least, it was not denied that the pages had been missing; they were found in a box which had not been opened for years, when Dr. Nicholas was looking, not for them, but for something else! And when they were found, no notice was given to the plaintiff or his solicitors, although the defendant had made affidavit, on the first production of his MSS., that he had not, and never had had, any other documents connected with the suit in his possession. Nor was it difficult to see why these pages had been kept back. The differences which were to be traced between them and the corresponding parts of the 1863 MS., the tags at the end of sections, the side notes in different ink, were all illustrative of the curious coincidence of the wonderful box. They all fitted in exactly with the other trains of cumulative circumstantial evidence. On that point, however, he would not then detain his Honour any longer, but would recur once more to the MS. of 1866, and would call his Honour's attention to an erasure which Dr. Nicholas, when in the witness-box, had first said that he could not see, and had afterwards admitted that he might possibly have made. That erasure was in the table of contents, and his Honour would see that where the words "Mental and Moral" then stood, the word "Psychical" had stood before. The head of the P and the tail of the y had been most carefully erased with a penknife, or some such instrument, and a number of strokes had been added to increase the apparent length of the word.

The Vice-Chancellor here asked, "But even supposing that has been done, what is your point, Mr. Grove?"

Mr. GROVE continued. My point, Sir, is that the use of this word "Psychical" gives a complete verbal identity in the plans of the two books, though Dr. Nicholas has attempted to conceal that identity by substituting the words "Mental and Moral" for the word "Psychical".

The VICE-CHANCELLOR: Oh, I thought you had some point there.

Mr. GROVE: Yes, sir, and a most important point, which is illustrated by another similar erasure in the body of the MS.

At this interesting juncture, the court rose for the day.

On the following morning, Saturday, May 1st, the cause was set down for hearing after the unopposed motions, and Mr. Grove resumed his reply at a quarter before twelve o'clock. His speech was such a masterpiece of clear and brilliant exposition, and it was assisted by such dramatic incidents that we shall henceforward abandon the *narratio obliqua*, and give as nearly as possible his own words.

Mr. GROVE said,—Your Honour will remember that when the court rose yesterday, I was calling attention to the erasure of the word "Psychical" in

the table of contents of the MS. of 1866. My learned friend Mr. Kay at an early period in this trial interrupted me somewhat triumphantly to remark that the plans of the two books are not identical, because Mr. Pike speaks of the evidence of psychical characteristics, while Dr. Nicholas speaks of the evidence of mental and moral characteristics. Whatever force there may have been in that remark is turned against himself by this excessively careful erasure of the very word "psychical." The word has not simply had the pen run through it, as would be done by anyone correcting a MS. for the printer; but extraordinary pains have been taken, though taken in vain, to destroy with a knife, as well as a pen, all trace of the word which gives a clue to the piracy. And the very same thing has been done in the body of the MS. in the heading of the section corresponding with the table of contents. There also either the word "Psychological" or the word "psychical" (and I am confident that it is the word "psychical") has been manipulated in the same way for the purpose of concealing the fact that the word has been used. And I ought to tell your Honour that, although most of the facts have been furnished by the persons instructing me, I have myself made the discovery of this second erasure, and a most important discovery it is, as showing the defendant's *animus*.

The VICE-CHANCELLOR. As this is a new point not previously brought forward in evidence, either Mr. Kay or Mr. Morgan will have a right to reply upon it.

Mr. GROVE. Certainly; upon the second erasure alone. Here, then, we have a complete identity of plan—even to the very words which Dr. Nicholas has attempted to conceal—"the historical evidence" in the one book, "the historical argument" in the other; "the philological evidence" in one book, "the evidence of philology" in the other; "the evidence of physical characteristics" in one book, "the evidence of physical characteristics" in the other; and, finally, "the evidence of psychical characteristics" in one book, and "the evidence of psychical characteristics" in the other. After the observations made by your Honour, I need not dwell further upon the remarks of my learned friend, Mr. Kay concerning the manner in which the plans of the two books have been set out in the bill. He insisted much on the fact that no chapter or section is headed either "The Evidence of Physical Characteristics," or "The Evidence of Mental and Moral Characteristics," but, as your Honour has perceived, the chapter is headed "The Evidence of Physical, Mental, and Moral Characteristics," and of that chapter the first section treats of the "physical," the second of the "mental and moral characteristics of the English people. The words "The Evidence" have simply been brought down from the heading of the whole chapter to the headings of the sections, and the plan of Dr. Nicholas's book is quite correctly stated in our bill.

Before I pass from the identical plans to the identical passages in the two books, I have a word to say upon the manner in which Dr. Nicholas tells us that he composed his work. We have 168 different books mentioned in his list of authorities (I have not myself counted them, but I take the computation of my learned friend Mr. Kay) 168 books consulted by a gentleman who wrote most of his work while he was travelling about! Is it a matter for surprise that he could not tell us where he saw any one of the authorities about which I asked him? Where did he see Pouchet? He did not know; he could not say! It might have been at the rooms of the Anthropological

Society, but he was not, as it turned out, prepared to assert that he ever consulted a single book there in his life.

The VICE-CHANCELLOR. He was not a member of the Society at the time.

Mr. GROVE. No, sir, he was not; but I was willing to suppose that the Anthropological Society is a hospitable body, and that if a stranger wished to consult a book he might be permitted to do so. But I can give your Honour another reason why Dr. Nicholas would not state positively that he saw Pouchet in the library of the Anthropological Society. It was because we had in court an officer of that Society who would have proved that he never consulted any book whatever in that library before the appearance of his own work. I can give your Honour a reason why he would not state positively that he consulted Retzius at the British Museum; it was because we had in court an officer from the museum who would have shown that Retzius was not in the library at the time.

The VICE-CHANCELLOR. I have written to inquire about both Pouchet and Retzius, and I expect an answer shortly from Mr. Watts, the keeper of the books at the Museum.

Mr. GROVE. Then I will pass on to another point, and make a remark upon Dr. Nicholas's memory. It was extraordinary what a perfect recollection he had of every date, of every minute fact, of every locality, when my learned friend Mr. Morgan was examining him in chief. But it was still more extraordinary that he was unable to remember anything when he was cross-examined by me. Time, place, and every detail had become quite suddenly a blank to him. It is a difficult thing to deal with such a witness as that, and I confess that he tried my patience. I confess that when I thought I was pinning him down to one solitary definite statement, I made use of an expression which was not suited to this court, and asked him whether he would swear it, although he was already upon his oath.

The VICE-CHANCELLOR. You need not apologise again for that, Mr. Grove.

Mr. GROVE. It was his demeanour in the witness-box that wrung the expression from me.

The VICE-CHANCELLOR. Here is the letter from Mr. Watts. [The purport of this letter was that the French edition of Pouchet, published in 1864, and mentioned by Dr. Nicholas in his list of authorities, was not in the Museum at all (though other editions were), and that Retzius had only been added quite recently to the library of the Museum.]

Mr. GROVE. That, sir, is what we knew to be the case; but I have another word to say about Retzius. [To Dr. Nicholas's solicitor.] Give me your copy of Retzius. [A new and unsold copy was handed up to him.] [To Mr. Pike's solicitor.] Now let me have Mr. Pike's copy. [An old and much worn copy was handed up to him. He took the new copy in his left hand and the old copy in his right, and held them out before him.] Here, he continued, your Honour will perceive the characters of the two men. Here in my right hand are seen the marks of honest industry, of persevering research, of the midnight oil; there in my left is Dr. Nicholas's representative, bought a few weeks ago, and consulted only for the purposes of the present suit. [This burst following upon the letter from the Museum caused no small sensation in court.]

Mr. GROVE resumed: It is not only Retzius, nor even Retzius and Pouchet alone, that Dr. Nicholas has professed but omitted to consult. Your Honour has heard him confess that he would not venture to translate Gildas for

himself and took his translations from Bohn. And when he was reading his Bohn, and compiling his great list of 168 original authorities, he was travelling about the country so lightly equipped that he could not even carry the whole of his MS. of 1865 with him, but had to tear out leaves in order to lighten his luggage? Yet this MS. book is not a large one; and where were then the 168 authorities. Need I suggest to your Honour that, if he was travelling about at all, he was travelling with no works of reference but Pike and Bohn in his carpet bag?

The VICE-CHANCELLOR. That is your theory, of course.

Mr. GROVE. That is my theory, certainly, on the assumption that he was travelling in Wales, though on this point, as on many others, his memory was so defective that I cannot understand where he was during any part of his journey.

The VICE-CHANCELLOR. I could not quite understand it. There was something about his head-quarters being at Carmarthen.

Mr. GROVE. So I understood at last, though my first impression was that he started from London. But, wherever his head-quarters may have been, he was very positive in stating that this work, with all this list of authorities, was written while he was travelling, he cannot say where. It may be that this will afford some explanation of the identity of passages in the two books and I propose to go through the criticism of Gildas and the sections on hair colour and skull-form to show your Honour that there is hardly a paragraph in them which does not closely agree with something to be found in Mr. Pike's book.

Mr. GROVE, in commenting upon the various passages, said an attempt has been made to show that Dr. Nicholas's criticism differs from Mr. Pike's because the former uses the word "monk" and the latter does not. Mr. Pike, however, says Gildas exercised an ecclesiastical function, and he could hardly have done that in those days unless he had been a monk. An attempt has also been made to show that the words "*rutilatæ come* not *rutilæ comæ*," have been taken by both authors from Prichard. But, as your Honour has seen, Prichard, though he quotes Livy, makes no such comment, and uses the expression "*rutilatæ come*" for a wholly different purpose. He does not, like Mr. Pike and Dr. Nicholas, confound the degenerate Galatians of Asia with the true Gauls of Europe, but speaks of them as being what they really were, and actually treats the word "*rutilatæ*" as though it were equivalent to "*rutilæ*," by saying that the Galatians had naturally a xanthous complexion. And while on this topic I may as well point out to your Honour that Prichard's whole system and opinions are so far from being the foundation of any part of Mr. Pike's book that the two are in direct opposition. Prichard says he does not know how to account for the fact that the English have dark hair, when all their possible ancestors, Celtic and Teutonic alike, had fair hair. Mr. Pike says the English are descended from the Britons because the Britons had dark hair. Again Prichard says that resemblances and differences of skull-form and other physical characteristics afford no ground for assuming identity or difference of race, while Mr. Pike, followed by Dr. Nicholas, lays special stress on the argument from skulls and hair.

[The learned counsel here cited a number of passages from Prichard's *Physical History and Natural History of Man.*]

So much for the argument from Prichard, which was to have destroyed one of our positions. Then as to the copied blunder in the description of Blumenbach: a copy of Gliddon has been produced, in which the whole collection

is described as "Decades," but Dr. Nicholas could not tell us when or where or from what copy of Gliddon he got that description. And he has still left unexplained the fact that he introduces the letter *e* between *i* and *d* in the Christian name, which in the title-pages of Blumenbach's collection is written Frid. It is, no doubt, only another of the curious fortuitous coincidences, of which we have so many, that Mr. Pike had previously done precisely the same thing. It is curious, too, that Dr. Nicholas has nowhere mentioned Gliddon in his book; and then, again, it is curious that both Mr. Pike and Dr. Nicholas should erroneously take Middlesex and Surrey as the representatives of London, when Dr. Nicholas might have found a table giving all the particulars he wanted for London itself, without putting himself to half so much trouble. He wanted the proportion of the inhabitants of London born out of London; he says he consulted the Census Returns of 1861; yet there is the very information he wanted ready to his hand, and nothing which could induce him to follow the inaccuracy of Mr. Pike, who went to the return of 1841.

Much has been said about the impossibility of the piracy having been committed at any time when Dr. Nicholas's MS. was in his possession after the appearance of Mr. Pike's book. It is not for me to give the exact time when each particular passage was taken. There was a considerable interval between May 31st, when Mr. Pike's book was published, and the 2nd of July, when Dr. Nicholas's Essay was sent in. And the time between the holding of the Eisteddfod and the sending of the MS. to Dr. Rowland Williams we really know nothing at all about. Dr. Williams does not tell us positively when he got the MS. It might have been in September, or in October, or—

The VICE-CHANCELLOR. He said he had been told that in Court.

Mr. GROVE. He said he had been told that; and even if we admit it, nothing is proved by it. The MS. was sent to Mr. Max Müller before it was sent to Dr. Williams. Why then was not Mr. Max Müller called? It is idle to say that Dr. Nicholas had no opportunity of adding to his MS. after the Eisteddfod on such evidence as this. We have no evidence when the MS. was sent to Dr. Williams, or where it was before it was sent to him. Then we have been told, or have had it insinuated, that every one who treats on the subject must have exactly the same plan, and every one who takes a view opposed to our Teutonic origin must discredit Gildas. The simplest answer to that is that Dr. Nicholas's Essay of 1865 was not on the same plan, and did not contain a criticism of Gildas. And then my learned friend Mr. Osborne Morgan says that every essay sent in must of necessity make out the English to be descended from the ancient Britons or it would have no chance of success. Why, that is the very opposite of the truth. The Welsh, it is true, believe themselves descendants of the ancient Britons, but they believe that of themselves in contradistinction to the English, and they pride themselves upon it in opposition to the "Saxon." In fact, the common expression "Dim Seisnig" is the true index to their real feelings.

And now I am glad to say I have arrived at the end of a case which has been most difficult and most painful to me; but I hope your Honour will see that there is an amount of cumulative evidence brought forward which admits of only one hypothesis except that of a miracle.

Mr. MORGAN, having the right of reply on the second erasure, said: My explanation of it is that the word erased is neither "Psychological" nor "Psychical" but "Physiological." The fact is my client's book shows in many places that he has a most imperfect knowledge of Greek, and I believe he did not know how to spell the word "Physiological." It seems to me that he

left out the *h*, and when he discovered his mistake he was so much ashamed of it that he tried to conceal what he had written. That I believe to be the true explanation.

Mr. GROVE said, he would not controvert his learned friend's opinion of Dr. Nicholas's attainments in Greek or English, but he believed his Honour would see that the word erased was not "physiological", but "psychical", or if not that, "psychological", and either of the two would serve his purpose.

The VICE-CHANCELLOR said, that so many important issues were involved that he should reserve his judgment until after the vacation.

Judgment in the cause was given on May 24th. The Court, as before, was crowded with literary and scientific men, and the most profound silence was maintained whilst his Honour, after stating the object of the suit, pronounced judgment as follows :

"The plaintiff says in substance, 'I wrote my book in support of a theory that the English are not, as generally supposed, mainly and substantially of Anglo-Saxon or Teutonic race; but that, on the contrary, they are plainly and substantially of the old Celtic race,—the same people which possessed this land before the invasion of the Romans. I proceeded,' he says, 'to consider the subject under the heads of—1. The Historical Evidence; 2. the Philological Evidence; 3. the Evidence of Physical Characteristics; 4. The Evidence of Psychical Characteristics.' The defendant has pursued in the third part, which occupies by far the greater portion of his book, precisely the same plan, with this difference, that he has added a chapter on English law; that he has made a separate chapter of the evidence of topographical and personal names; and that for the word 'psychical' he has used 'mental and moral.' The plaintiff says, 'that plan, which is in substance identical with mine, is copied from mine.' He further says, 'It was necessary to my argument to get rid of a good deal of what had been taught us as history of the Anglo-Saxon invasion, and I accordingly proceeded to show that the stories of Hengist and Horsa, of Vortigern and Vortimer, of the complete expulsion of the British race by the Saxon invaders, were mythical. In the investigation of that subject, I traced the whole of what has passed for history to Gildas, and I proceeded to inquire to what extent, according to the canons of modern historical criticism, reliance could be placed on the narrative of Gildas, and I came to the conclusion, on several grounds, that the narrative is wholly untrustworthy. In the defendant's book, I find that he adopts exactly the same course of argument, the early history treated as of the same legendary character. I find it traced to Gildas as the sole foundation for it. I find the authority of Gildas then tested by the same canons, and the same conclusion which I had arrived at also reproduced, and on the same, or substantially the same, grounds. It is not only the logic

which is the same, but the rhetoric shows most singular coincidences.' (His Honour here referred to passages from the works of plaintiff and defendant.) The plaintiff further says, 'I took especial pains with respect to certain physical characteristics, the colour of the hair and the form of the skull. I said that there was a popular theory starting with two assumptions:—1. That the Anglo-Saxons were a fair-haired, red-haired, or flaxen-haired people: 2. That the English are a fair-haired, red-haired or flaxen-haired people. I proceeded to demolish both these assumptions. The defendant has done the same. As to the second assumption, I proceeded to give the results of my personal examination of 4,848 heads in London; and proceeded further to show, from the population abstracts, that London might be considered a fair representative of the whole of England; that it is peopled not exclusively by Londoners, but by natives of all parts of the country. I find,' the plaintiff says, 'in the defendant's book a similar statement of identical results of personal investigation; and, what is very extraordinary, I find that though the defendant's results are given as arrived at both in London and the north of England,—6,000 in the one, and 5,000 in the other,—he, too, proceeds to show, and to show from the population abstracts, that the population of London is drawn from all parts of the island. I proceeded,' the plaintiff says, 'to ascertain what was said by ancient authors, and with what qualifications these statements were to be received as to the hair, colour, eyes, and complexion, of the ancient inhabitants of these islands, the Gauls, and the ancient Germans. The defendant has referred to the same descriptions, and made the same qualifications. For example, I pointed out that when Tacitus and other writers asserted that all the Germans had blue eyes and *rutilæ comæ*, it was to be noted that the Greeks and Romans were generally dark-haired, and may have regarded fair hair as a rare and great beauty, and may have been struck by a proportion of light hair greatly in excess of that which they found among themselves. Again, having premised that the passages in which the Gauls or Celts are described have been carefully collected by Prichard, I made a comment on the passage quoted by Prichard from Livy, that the expression was '*rutilatae comæ*', and not '*rutilæ come*', 'reddened,' not 'red'. Having come to the conclusion that the Gauls were in the habit of dyeing their hair of a lighter hue, I made a passing reference to the alleged custom, now prevalent in France and England, of dyeing the hair red. The defendant has made the same fashion the subject of a rhetorical paragraph.'"

His Honour, after mentioning other charges made by the plaintiff against the defendant of having adopted his results without inde-

pendent investigation, especially in reference to the argument derived from a comparison of skulls, proceeded as follows:—

“These are some, and some only, of the points to which the plaintiff's counsel has drawn my attention. I have read both the books carefully in the parts complained of, and if the matter rested on a comparison of the two works, I could have no doubt whatever that the defendant's work was, in these parts, a palpable crib from the plaintiff's, transposed, altered, and added to,—to use the words of Lord Strangford's award, ‘essentially, indeed typically, second-hand, run off easily from the pen by a well-trained writer’,—a writer, I would add, skilful in appropriating the labours of another, and in disguising, by literary artifices, the appropriation.

“But the defendant has pledged his oath to this, that his work is an independent work, written substantially before he had seen the plaintiff's work, and that the resemblances are due to the nature of the subject,—to the object, which was common to both, of establishing for the ancient British a large share in the production of the great British nation of the present day,—to the obvious nature of the topics which such an object would suggest to any persons who had followed the course of modern historical criticism, and of ethnological and anthropological research and speculation, and the like obviousness of the authorities which such persons would refer to and quote. His answer contains the following passage:—

“I say that the MS. from which my said book was printed, with the exception of appendices A, B, and C, which I afterwards inserted at the suggestion of Professor Max Müller, and of the index, and of some additional sentences and notes, principally suggested by Professor Max Müller and Dr. Rowland Williams, is *verbatim* the same MS. as that which I submitted for competition at the Eisteddfod in 1866, some months before I had ever seen or heard of the publication of the plaintiff's work, etc.”

His Honour proceeded:—“The defendant has been examined and cross-examined before me at considerable length. He adheres to his statement in the answer, with one most notable exception. He now states that the whole chapter about Gildas was written, or as he calls it, re-written, after he had seen the plaintiff's book, and after the MS. had been submitted to Professor Max Müller and Dr. Rowland Williams, and he, not an illiterate man, but an author accustomed to test the weight of historic texts, can give no further explanation of the deliberate and emphatic statement in paragraph 18 (the passage quoted from the answer) than that it is stronger than his instructions to his solicitor went. It has been pressed on me that I cannot decide against the positive oath of the defendant without convicting him of

wilful and corrupt perjury. I have had occasion more than once to say that this is not a criminal court ; that I am trying no one for any crime ; I am here bound by my own judicial oath to well and truly try the issue joined between the parties, and a true verdict give according to the evidence ; that is to say, according as I, weighing all the evidence by all the lights I can get, and as best I may, find the testimony credible or incredible, trustworthy or the reverse. The law which admitted the testimony of the parties, and of interested persons, was passed in full reliance on the judges and on the juries that they would carefully scrutinise such testimony, and would give it such weight as it deserved, and no more, or no weight at all. Is the result of the defendant's examination, or cross-examination, such as to enable me to place reliance on his story ?

" To begin with, I have read through carefully the whole of the notes marked A and B, which were the materials for his first essay, and I am satisfied that he had not, at the time he wrote them, the remotest idea of that which is now found in the parts of his book complained of. To the author of A and B the common school histories of England were genuine history. Hengist and Horsa, Vortimer, and Vortigern were historic persons ; there is no trace whatever of the sceptical criticism which will have it that the whole of that history, fit only for the nursery, is to be carried back to Gildas only, and that Gildas, if not himself a mythical or shadowy personage, is a historic witness wholly untrustworthy. Indeed, the author was so little versed in the subject, that he talks of Gildas copying Bede, and putting in darker colours. There is no trace whatever in these notes of the examination of the ancient authorities as to hair and complexion of Britons, Gauls, and Germans, and of the numbering of the colours and shades of hair of the present people of the country. There is no trace whatever in those notes of the examination of the evidence afforded by ancient skulls, and of the comparison between that evidence and the results of a careful examination of the existing types of modern heads, English and German. The plaintiff says, ' If you did not take all this from my book, tell me where you took it from. Where are the materials from which you elaborated it ? ' The defendant is unable to say when or where he gathered the materials, or when or where, indeed, he wrote any part of his present essay. The collection of materials for a genuine literary work is a thing of time and labour. You cannot walk by instinct to the proper shelf of a library, take down the right book, open it at the right page, and hit on the right passage, and just the book, the page, and the passage, which somebody else has found before you. The defendant has not a single rough note to produce, no trace of his quarrying in the British Museum, or

any other like quarry, from which the stones of the literary edifice were to be built up. His Honour then referred to defendant's diary from February, 1866, up to July 2, when the prize essay was sent in, and observed,—It is certainly very singular that an author should not be able to give a single place or time when or where he consulted a high authority, and that he should not be able to produce a single original note, extract, or quotation. Then there were some special matters on which he was especially pressed :—‘ You have quoted Retzius, where did you find him ? ’ ‘ I cannot say.’ ‘ You have quoted Georges Pouchet, *Pluralité des Races Humaines*, Paris, 8vo, 1864), where did you find him ? ’ ‘ I cannot say.’ It is to be observed that these books are not in the British Museum. Again, he was asked about the public meetings at which it is stated in the book that 10,000 complexions had been marked for the purpose of this essay, with the detailed figures of the results obtained, ‘ Can you produce the times and places of these meetings ? ’ He is again unable to fix time and place. I have been, therefore, obliged to arrive at the conclusion that the account which the defendant has given of his composition of his work, in the matters complained of, is not probable, is not credible, is not trustworthy ; and the result of his answer, his examination, and his cross-examination, on my mind, so far from displacing, has confirmed the conclusion produced by the internal evidence and the comparison of the two works.

“ This conclusion, however, is not sufficient to dispose of the case. Plagiarism does not necessarily amount to a legal invasion of copyright. A man publishing a work gives it to the world, and, so far as it adds to the world's knowledge, adds to the materials which any other author has a right to use, and may even be bound not to neglect. The question, then, is between a legitimate and a piratical use of an author's work. In considering this I have not been unmindful of the small comparative extent of literary composition which is traceable from the one to the other ; I have not been unmindful that there was some not immaterial exercise of literary labour and skill in the transfusion and transposition which I have held to have been made, and I have endeavoured to guard myself against any prejudices derived from my hostile conclusions against the defendant which I have stated. I have considered it as if the defendant had openly borrowed from the plaintiff's book, and had candidly acknowledged the source. And I think there is a good deal which he might have done, so doing it. There is no monopoly in the main theory of the plaintiff, or in the theories and speculations by which he has supported it, nor even in the use of the published results of his own observations. But the plaintiff has a right to this—that no one is to be permitted, whether

with or without acknowledgment, to take a material and substantial portion of his work, of his argument, his illustrations, his authorities, for the purpose of making or improving a rival publication. That the part taken in this case is material and is substantial there is no better evidence than the defendant's own circular inviting subscriptions.

"The plaintiff, therefore, has in my judgment, made out his case, and he is entitled to an injunction to restrain the publication of the book in its present state, or of any book containing the 7th section of chapter 1, part III, or section 1 of chapter 5, of part III, and an order for the cancellation of those parts. He is entitled to his costs of the suit, and to an account and payment of his damages. I stated at the outset that my view of the damages in cases of literary piracy is that the defendant is to account for every copy of his book sold as if it had been a copy of the plaintiff's, and to pay the plaintiff the profit which he would have received from the sale of so many additional copies, and I adhere to that mode of assessment."

MUSIC IN RACE.*

IF there is anything to cheer the student of anthropology it is the daily growing influence his science exerts on other and often on very distant fields of inquiry as soon as that inquiry begins to assume a really scientific character. Of the many instances thereof which have lately come under our notice one is too significant to be entirely omitted from this *Review*, although we are unable, from want of space, to give of it so full an account as it in some respects deserves.

Whilst the Anthropological Society of London has been discussing about the connection between race and religion, a very fierce dispute was carried on amongst the musicians and critics of Germany about the Jewish element in modern music. Of course, the subject is eminently one which falls to the domain of anthropology, and nobody but a student of the science of man will be entitled to speak with

*¹ *Das Judenthum in der Music.* Von Richard Wagner. Leipzig: den J. J. Weber, 1869.

² Wilhelm Lübeck und Eduard Hanslick über Richard Wagner. Berlin: Louis Gerschel, 1869.

³ Offenes billet-doux, etc., an Herrn Richard Wagner. Von E. M. Oettinger. Dresden: L. Wolf, 1869.

⁴ *Das Judenthum und Richard Wagner.* Berlin: W. Adolf and Co., 1869.

⁵ *Histoire du Lied ou la Chanson Populaire en Allemagne,* par Edouard Schuré. Paris: Librairie Internationale, 1868.

authority in such a discussion. As in religious and political questions, when race has once been admitted, it becomes a factor of the highest importance, so now in a musical controversy ; the science of race is therefore, we repeat it, quite indispensable to form a judgment on many subjects apparently distant and far removed from it ; and to its opponents, who threaten the very existence of such a science, the poet has said,—

“ Ils disent qu’elle est morte,
Moi, je la crois vivante.”

Richard Wagner has played for a quarter of a century so prominent a part in the music and literature of Germany, that we cannot but be pleased to see him enter on an ethnological inquiry and give us his views about the influence of race on music and art, language and literature. Unfortunately for him, he has mixed up personal matter to such an extent with his theory, that it impairs very seriously the value of his pamphlet. On the other hand, there is in everyone of the numerous replies which have appeared to it a violent if not offensive tone of invective utterly at variance with the calmness and equanimity which ought to characterise the treatment of scientific topics ; the cause of it is no doubt an indignation not altogether unnatural at Wagner’s undisguised and unmeasured attacks on Jewish composers and writers of eminence whose works have endeared them to their contemporaries. Of course, we are far, very far from anything like a settlement of the race question or any part of it ; but so much is certain, the time has gone by for simply ignoring the element of race in human affairs ; it is a difficulty we must grapple with ; a know-nothing-policy will not solve it. We, consequently, cannot agree with those who blame and vilify Wagner for having drawn attention to a subject of importance, however much we may dissent from his views and object to the language in which they are couched. The arrogant and self-opinionated style of his former writings has always been a source of complaint to his friends, and a weapon of ridicule in the hands of his enemies ; still the book under our notice is in its personal parts far surpassing the faults observed in his previous works, many passages bordering on the ludicrous if not actually so. To separate from the ever-intruding self of the author what bears on the question of race, and is perhaps valuable, requires an effort in which only an enthusiastic student of science will be successful ; his opponents, however, have replied more fully to the personal than to the theoretical portions of the essay ; we can refer to the latter only.

Wagner maintains that up to the present day the Jews are strangers in the countries in which they are born ; that they speak and write their languages as foreigners do ; that the national element in art

(including poetry, music, &c.) being essential, the Jews cannot exercise any wholesome influence in the progress and development of art and literature: no attempt is made to prove these sweeping assertions; instead of a proof, we merely meet with an appeal to our senses and feelings. But as Tennyson says,—

“They are dangerous guides the feelings,”

and in this instance we are disposed to agree with him. Wagner's adversaries parade a host of well known names to substantiate the claims of contemporary Jews to eminence in literature and art. Still we do not find any exhaustive answer to some of Wagner's remarks; the creative genius of true poetry appears no doubt in an enfeebled form in the modern Hebrew, and the only apparent exception of which we are aware is the case of Heinrich Heine, whose father was a Jew, whilst his mother, if we may judge by a sonnet addressed to her, sprung from a noble family of German extraction. The subject is too wide to be more than alluded to in the present notice, and we must make haste to come to the musical part of the controversy.

It is, we believe, an established opinion that music is the branch of art in which the Jewish element is most conspicuous and successful. Wagner who in his former writings has been exerting himself to detract from the glory which by his admiring countrymen is shed round the heroes of their favourite art, Gluck, Mozart, and Beethoven, who were not of Jewish origin, now undertakes to annihilate the fame of Mendelssohn and Meyerbeer, who undoubtedly were Jews; but instead of sound and impartial criticism of their works we are treated to an argument of the impossibility of Jews composing anything of value at all.

It is stated that if you have no thoughts of your own to express in music you may still go on composing a vast number of works by reproducing in a varied form and manner the thoughts of others. According to Wagner the Jews excel in this particular, and composers of another nationality if influenced by them or by the prevailing (Jewish) taste of the period are apt to do the same. It does now-a-days, he tells us, not matter to the public or the critics, what is said in music, but how it is said. This low estimate of our concerts and operas and their frequenters strangely contrasts with the notion that never at any period was good and genuine music more cultivated and cherished than it is now. Wagner's enemies, therefore, retort that he only becomes a *laudator temporis acti*, because his own pretensions as a leading composer are at present very little appreciated. Another assertion, equally startling, is that Jews are incapable of being good actors or singers or performers on the stage; amongst the causes alleged for this defect we find an allusion, not sufficiently worked out,

to a racial peculiarity in uttering sounds, and to absence of general artistic ability in the modern Jew originating in his selfishness and his unsympathetic and dispassionate mental organisation. Unfortunately Wagner hardly ever condescends to particulars ; we must therefore take a great deal more upon trust than we feel disposed to do, and there can be no doubt that his opponents have mostly the best of the argument when they bring forward notorious cases in which the successes of Jews upset the theories advocated by Wagner.

Still that does not go to the root of the matter. There may be some important truth underlying a theory which, unless confined to proper limits, appears to be in contradiction to daily observed facts ; this is but of too frequent occurrence with writers who do not proceed systematically with their subjects, and certainly the absence of all scientific method and scientific spirit in the essay of Wagner and in the replies it has called forth is sincerely to be regretted. We can look upon them only as material not entirely valueless to a future enquirer into the place which the Jews occupy in nature ; a subject of considerable interest to the anthropologist, one which has often been touched upon incidentally by authors of all kinds and all nations, but never yet treated comprehensively, impartially, and from a scientific point of view.

We cannot conclude this notice without warmly recommending Monsieur Schuré's *Histoire du Lied* to all students of the subject ; it treats in a masterly manner a subject which is not entirely disconnected with the subject-matter of the Wagner-controversy, although published without reference to the latter, and in fact some weeks before it commenced. To all anthropologists interested in folk-lore, the character of the Germans, or music, this history of German song will be a welcome gift, all the more so as it is written in an easy and elegant style not at all inconsistent with learned research and laborious study.

WALLACE'S MALAY ARCHIPELAGO.*

MR. WALLACE is well known as an accomplished naturalist and an indefatigable traveller, and in the work before us we have the fruits of his scientific labour during a seven years' residence in the Malay Archipelago. During this period, Mr. Wallace travelled upwards of fourteen thousand miles, making sixty or seventy separate journeys within the archipelago, with no despicable result, if we may judge from the number of specimens in natural history he obtained, embracing many new species. The details he gives of animal life in the far east are full of interest, his account of the bird of Paradise being especially interesting to the naturalist. Our readers, as anthropologists, will, however, take a keener interest in the particulars our author gives relative to the great man-like ape of Borneo,—the orang-utan, or *mias*, as it is called by the aborigines. Any details of the habits of this animal must be acceptable, as bearing on the vexed question of man's relationship to the ape tribe. Mr. Wallace was so fortunate as to obtain a young female *mias* alive and unhurt, and although it was extremely young, he was able to keep it alive for nearly three months. During this period he had much opportunity of observing its habits, and it is curious to notice how closely they resembled those of a human baby. This was the more noticeable, as a young hare-lip monkey (*Macacus cynomolgus*), of apparently about the same age as the *mias*, was much more active than the latter, and displayed a much greater intelligence. Thus, "the *mias*, like a very young baby, lying on its back quite helpless, and rolling lazily from side to side, stretching out all four hands into the air, wishing to grasp something, but hardly able to guide its fingers to any definite object ; and when dissatisfied, opening wide its almost toothless mouth, and expressing its wants by a most infantine scream. The little monkey, on the other hand, in constant motion ; running and jumping about wherever it pleased, examining everything around it, seizing hold of the smallest objects with the greatest precision, balancing itself on the edge of the box or running up a post, and helping itself to anything eatable that came in its way." The continual effort to grasp something with the hands, observed of the *mias*, and the satisfaction exhibited when it obtained possession of a stick or a rag, are remarkably babylike. Hardly so the pleasure it took in being placed "under the pump" and afterwards

* *The Malay Archipelago*, by Alfred Russel Wallace. London : Macmillan and Co., 1869.

rubbed dry, although it is not fair to judge on this point between a young ape and the hairless, sensitive infant of civilisation. It might be different with the Aïno, if we may trust the Japanese reports of the hairiness of its parents, or even with the baby-swimmer of Polynesia. The mias, at least, as our author tells us, seemed to be perfectly happy under the process, "lying quite still, with its arms and legs stretched out, while I thoroughly brushed the long hair of its back and arms."

The way in which it expressed approval or dislike of its food was amusing, and much akin to that usually supposed to be characteristic of human infancy. "Thus," says Mr. Wallace, "the poor little thing would lick its lips, draw in its cheeks, and turn up its eyes with an expression of the most supreme satisfaction when it had a mouthful particularly to its taste. On the other hand, when its food was not sufficiently sweet or palatable, it would turn the mouthful about with its tongue for a moment as if trying to extract what flavour there was, and then push it all out between its lips. If the same food was continued, it would set up a scream and kick about violently, exactly like a baby in a passion." This screaming was its usual plan of attracting attention if it thought itself neglected, although it showed its superiority over the human infant by becoming quiet after awhile if its cries were not attended to, only, however, to renew them again immediately it heard anyone's footstep. Unfortunately, Mr. Wallace was not able to keep this interesting little animal longer than the period we have named; but even in its illness it presented phenomena such as those exhibited by man. It had an attack of diarrhoea, of which, however, it was cured by a dose of castor-oil, but it soon afterwards presented symptoms which "were exactly those of intermittent fever, accompanied by watery swellings on the feet and head." Of this disease it died, much it may be well imagined to our author's regret.

As to the habits of the adult mias, Mr. Wallace gives us some interesting information. According to him, the representations of its walking with a stick are entirely imaginary, and he says that "the orang never walks erect unless when using its hands to support itself by branches overhead, or when attacked." Indeed, it appears seldom to quit the trees, along the branches of which it walks "almost as quickly as a person can run through the forest beneath." The mias appears to be a remarkably unsocial animal. Mr. Wallace says he never saw two full-grown ones together, although both males and females are occasionally seen with half-grown young ones, or three or four young ones may be in company. The liking of the mias for unripe, sour fruits is remarkable, but its most curious habit is that of

making a nest for use at night. Mr. Wallace observed this in a male animal he had wounded, and which immediately sought a place of safety at the top of an immense tree. "It was very interesting," says our author, "to see how well he had chosen his place, and how rapidly he stretched out his unwounded arm in every direction, breaking off good sized boughs with the greatest ease, and laying them back across each other, so that, in a few minutes, he had formed a compact mass of foliage which entirely concealed him from our sight. Mr. Wallace records that on three occasions he observed the mias to throw down branches when irritated, although he appears to think that this habit is confined to the female animal; probably dictated by a desire to protect her young.

The limited range within which the large man-like apes are met with is very remarkable. There can be little doubt that, in the Malayan Archipelago, the mias is restricted to the islands of Sumatra and Borneo, which, as our author observes, are almost the last inhabited by the higher mammalia. It may be, perhaps, that the reason why this animal is confined to certain districts of those islands will, in some measure, also explain its absence from the other islands. Thus, in Borneo it is found only "when the country is low-level and swampy, and at the same time covered with a lofty virgin forest," which appears to be necessary to the "comfortable existence" of the mias. It disappears when the country "becomes slightly elevated, and the soil dry." Mr. Wallace refers to several exaggerated statements as to the size of the mias. One, which was described by the sailors who killed it as being seven feet high, is found, on measuring its skin, to be only about four feet in height. The largest of nine adult males measured by our author himself, stood only four feet two inches when fully erect, the extent of the outstretched arms of the whole series varying "from seven feet two inches to seven feet eight inches, and the width of the face from ten inches to thirteen inches and a half." The mias is more remarkable for strength than for height; and Mr. Wallace was told by the natives, that of all the animals of the forest only the crocodile and the python dare attack it: even these are beaten in the conflict which ensues.

Although Mr. Wallace during his residence in the Malayan Archipelago was chiefly engaged in the practical study of natural history, yet so good an observer could not help gleaning much information respecting the races of man with whom he came in contact. The anthropological details he gives are of great value, although, perhaps, they are somewhat directed towards the support of a particular theory. Mr. Wallace says that "before he had arrived at the conviction that the eastern and western halves of the Archipelago belonged to distinct

primary regions of the earth, I had been led to group the natives of the Archipelago under two decidedly distinct races." When, therefore, he found that there was this separation between the eastern and western halves of the archipelago, our author would naturally look for the marks of distinction between the races of man inhabiting them, and it may be that he did not sufficiently notice those which had the opposite tendency. We are quite willing, however, to accept Mr. Wallace's data, and to try the justice of his conclusions by the evidence furnished by them. Mr. Earle some time ago pointed out "that a shallow sea connected the great islands of Sumatra, Java, and Borneo with the Asiatic continent, with which their natural productions generally agreed; while a similar shallow sea connected New Guinea and some of the adjacent islands to Australia, all being characterised by the presence of marsupials." The truth of this important statement is now confirmed by Mr. Wallace, and the details he gives in its support and the conclusions arrived at from them form the most valuable part of the work before us. It may now be taken as settled that there is a strong contrast between the natural productions of the eastern and western halves of the area comprised in the Malayan Archipelago; the especial importance of this fact to anthropologists being that there is apparently an analogous contrast between the human races inhabiting this area. The line of separation, however, owing to the migratory habits of the Malays, being somewhat eastward of that which divides the Indo-Malayan and Austro-Malayan geographical regions. According to Mr. Wallace, this line is, however, clearly traceable, and it is marked in the valuable physical map in illustration of these conclusions given in the first volume of his work. On the subject of the distribution of the human race in the Malayan Archipelago, our author says, "I believe that all the peoples of the various islands can be grouped either with the Malays or the Papuans; and that these two have no traceable affinity to each other. I believe, further, that all the races east of the line I have drawn have more affinity for each other than they have for any of the races west of that line; that, in fact, the Asiatic races include the Malays, and all have a continental origin, while the Pacific races, including all to the east of the former (except, perhaps, some in the north Pacific) are derived, not from any existing continent, but from lands which now exist or have recently existed in the Pacific Ocean." Mr. Wallace is undoubtedly correct when he says that in this conclusion he differs from most other writers on the subject. He is not singular in ascribing an Asiatic affinity to the Malays—a question which is, however, entirely distinct from that of their continental origin, as the dialects of their language are placed by philologists in the southern division of the

Turanian family of languages, and this conclusion is confirmed by the researches of anthropologists. Nor is Mr. Wallace alone in supposing the Papuans, with whom he classes the Polynesian islanders, to have had a local origin. This has long been a favourite idea, of French writers more especially, although we had thought it to be now sufficiently established that the ancestors of the present inhabitants of the Pacific islands reached them by oceanic migration from the Malayan archipelago. This would not, however, materially affect our author's position if the sacred island of the Polynesians can, as Mr. Williams suggests, be identified with *Bouru*, an island adjoining Ceram to the west of and within the Austro-Malayan region, although at present occupied by both Malays and Papuans. The important conclusion in which Mr. Wallace is almost singular is that these peoples belong to totally distinct races. He says, "Observation soon showed me that Malays and Papuans differed radically in every physical, mental, and moral character." If this be so, much labour has been wasted by other writers, whose chief efforts have been directed to ascertaining whether the Malays or the Papuans are the most primitive people, nearly all of them agreeing that one was derived from the other, although differing as to the actual relation between them. If, as Mr. Wallace supposes, these races have had different places of origin, there can be no question of priority, and we will now shortly consider the data furnished in support of the conclusion that they belong to totally distinct branches of the human family.

When Mr. Wallace visited the Ké Islands and there saw the Papuans at home, he was at once confirmed in the opinion he had already formed that the Papuans and the Malays belong to "two of the most distinct and strongly marked races that the earth contains." "Had I been blind," he says, "I could have been certain that these islanders were not Malays. The loud, rapid, eager tones, the incessant motion, the intense vital activity manifested in speech and action, are the very antipodes of the quiet, unimpulsive unanimated Malay. These Ké men came up singing and shouting, dipping their paddles deep in the water and throwing up clouds of spray; as they approached nearer they stood up in their canoes and increased their noise and gesticulations; and on coming alongside, without asking leave and without a moment's hesitation, the greater part of them scrambled up on our deck just as if they were come to take possession of a captured vessel. Then commenced a scene of indescribable confusion. These forty black, naked, mop-headed savages seemed intoxicated with joy and excitement. Not one of them could remain still for a moment. Every individual of our crew was in turn surrounded and examined, asked for tobacco or arrack, grinned at and deserted for another, all talked at once,

and our captain was regularly mobbed by the chief men, who wanted to be employed to tow us in, and who begged vociferously to be paid in advance. A few presents of tobacco made their eyes glisten ; they would express their satisfaction by grins and shouts, by rolling on deck, or by a headlong leap overboard. Schoolboys on an unexpected holiday, Irishmen at a fair, or midshipmen on shore, would give a faint idea of the exuberant animal enjoyment of these people. Under similar circumstances Malays *could* not behave as these Papuans did. If they came on board a vessel (after asking permission) not a word would be at first spoken, except a few compliments, and only after some time, and very cautiously, would any approach be made to business. One would speak at a time, with a low voice and great deliberation, and the mode of making a bargain would be by quietly refusing all your offers, or even going away without saying another word about the matter, unless you advanced your price to what they were willing to accept." Well might the Malayan crew be scandalised by the hoisterous conduct of their Papuan visitors. Mr. Wallace relies more on the diversity of moral features to prove difference of race than on physical peculiarities, although he declares that these are strongly marked. He says ; "The Malay face is of the Mongolian type, broad and somewhat flat. The brows are depressed, the mouth wide, but not projecting, and the nose small and well formed but for the great dilatation of the nostrils. The face is smooth, and rarely develops the trace of a beard ; the hair black, coarse and perfectly straight. The Papuan, on the other hand, has a face which we may say is compressed and projecting. The brows are protuberant and overhanging, the mouth large and prominent, while the nose is very large, the apex elongated downwards, the ridge thick, and the nostrils large. It is an obtrusive and remarkable feature in the countenance, the very reverse of what obtains in the Malay face. The twisted beard and frizzly hair," to which should be added the "sooty blackness" of the skin, "complete this remarkable contrast."

The contrast drawn by Mr. Wallace between these races is certainly a remarkable one, and if it can be established that the peculiarities ascribed to each are characteristic of all the peoples belonging to the particular stock, we think our author's opinion, that there is as much moral and physical difference between the Malayan and Papuan races "as between the red Indians of South America and the negroes of Guinea on the opposite side of the Atlantic" (although, perhaps, the statement is somewhat exaggerated), is substantially justified. But are these peculiarities so constant and so strongly marked as our author supposes ? Now, after comparing the portrait of the young dyak of Borneo given in the work before us, with the various Polynesian

sian faces depicted in the Rev. J. G. Wood's *Natural History of Man*, and also with that of the Javan chief, we certainly think not. The Javan chief and the dyak appear to us to differ in appearance much more than do the latter and some of the Polynesian islanders. The Javan has a Mongolic cast of countenance, which the Dyak clearly does not possess, although we do not deny that it is found among the Dyak peoples of Borneo. This difference in feature has its counterpart in that of mental phenomena. Thus Mr. Wallace says: "I am inclined to rank the Dyaks above the Malays in mental capacity, while in moral character they are undoubtedly superior to them. . . . They are more lively, more talkative, less secretive, and less suspicious than the Malay, and are therefore pleasanter companions. The Malay boys have little inclination for active sports and games, which form quite a feature in the life of the Dyak youths, who, besides outdoor games of skill and strength, possess a variety of indoor amusements. . . . These amusements indicate a capacity of civilisation, an aptitude to enjoy other than mere sensual pleasures, which might be taken advantage of to elevate the whole intellectual social life." Mr. Wallace gives other interesting details of the amusements of the young Dyaks, especially of a concert without musical instruments, which show that they are far from being of the taciturn disposition ascribed to the Malays. Compare this description with that of the Aru Islanders whom Mr. Wallace met with at Dobbo. He says "The natives here, even those who seem to be of pure Papuan race, were much more reserved and taciturn than those of Ké. This is possibly because I only saw them as yet among strangers and in small parties. One must see the savage at home to know what he really is. Even here, however, the Papuan character sometimes breaks out. Little boys sing cheerfully as they walk along, or talk aloud to themselves (quite a negro characteristic); and, try all they can, the men cannot conceal their emotions in the true Malay fashion." It is true that the same Papuans, if they had not been in contact with another race, might have been equally loud and impulsive in their habits. This is, however, all the more important in relation to the question at issue. It shows the influence of constraint and it leads us to believe that the *reserve* which Mr. Wallace treats as so marked a peculiarity of the Malay character is almost wholly the result of a similar state of circumstances, much intensified. Mr. Wallace when explaining the fact that, notwithstanding their greater intelligence, the Papuans have not yet made any such advance towards civilisation as that exhibited by the Malays, says; "It must be remembered, however, that for centuries the Malays have been influenced by Hindoo, Chinese, and Arabic immigration, whereas the Papuan race has only been subjected to the very partial and local in-

fluence of Malay traders." The true Malays, indeed, present every evidence of having been for a very long period subject to a tyranny which while developing certain faculties has crushed out almost the entire energy of life, an observation which, in effect, Sir Stamford Raffles long since made of the Javans. We see a similar phenomenon to some extent among the Chinese, and much more so among the kindred peoples of Siam and Burmah, whose customs it cannot be doubted present a very close resemblance to those of the civilised Malays. Where this influence is weaker, as in the case of the Dyaks, we see a nearer approach in mental characteristics to the Papuans, whose exuberance of manner is caused by the possession of a vital energy not yet depressed by the tyranny of authority and by the influence of a civilisation he is little fitted to receive. It will be seen from this that we do not attach the importance our author does to the mental peculiarities of the Malays.

It will be said, however, that their physical peculiarities at least are sufficient to completely separate the Malayan and the Papuan races. We are not, however, by any means convinced of this. The influence of the mind over the body is not yet properly understood, and when this influence is added to that of food and occupation, it is by no means clear that the physical appearance may not undergo as great a change as the mental phenomena themselves. We have seen that the cultivated Javan much more nearly approaches the Chinese Mongol than does the almost uncivilized Dyak. In relation to this question we would notice certain peoples who appear to possess both Malayan and Papuan characteristics naturally, and not as the result of a mixture of these races. Such are the *Alfuros*, or indigenes of Gilolo, whom Mr. Wallace describes as "an industrious and enterprising" race, and of whom he says:—"These people are quite distinct from the Malays, and almost equally so from the Papuans." In another place he says:—"Their stature and their features, as well as their disposition and habits, are almost the same as those of the Papuans; their hair is semi-Papuan, neither straight, smooth, and glossy, like all true Malays, nor so frizzly and woolly as the perfect Papuan type, but always crisp, waved, and rough, such as often occurs among the true Papuans, but never among the Malays. Their colour alone is often exactly that of the Malays, or even lighter." The indigenes of both Ceram and Bouru are very similar to the Alfuros of Gilolo, where in fact our author thinks he has found the exact boundary line between the Malay and Papuan races. Not the point of transition, however, for this Mr. Wallace declares does not exist, although he includes among the Papuans the light and dark peoples of Polynesia. On this subject he says, "I believe that the numerous

intermediate forms that occur among the countless islands of the Pacific, are not merely the result of a mixture of these races, but are to some extent truly intermediate or transitional, and that the brown and the black, the Papuan, the natives of Gilolo and Ceram, the Fijian, the inhabitants of the Sandwich Islands and those of New Zealand, are all varying forms of one great Oceanic or Polynesian race." Mr. Wallace indeed suggests the possibility of a Malayan or Mangolic influence, at a date long since passed, in the production of the brown Polynesians. It can hardly have been the former, seeing that the Polynesians sometimes present that obliqueness of the eye so characteristic of the Mongol, and which our author tells us the Malays never possess. Nevertheless, however this may be decided, the Alfuros of Gilolo appear to be a pure race, making a certain approach towards the Malay type, and such seems to be the case with the people of Minahassa (part of Celebes), whom our author describes as differing much "from any other people in the Archipelago." Now, although we are inclined to agree with our author in his opinion that these tribes who make some approach to the Malay type are not transitional varieties, and that there is in fact a real difference between the Malayan and Papuan races, yet we much doubt whether this difference is of so "radical" a character as he asserts. It is not at all impossible, although one of these races has not originated from the other, yet that they may both have sprung from the same root. It is strange, considering the important position in relation to the great Austro-Malayan area held by Australia, that Mr. Wallace should say so little about its aboriginal inhabitants. This continent is closely connected with the Papuan region of the Malayan Archipelago, and according to our author's views, we ought to find as close an affinity between the indigenes of the several parts of this region as between their fauna and flora. This is hardly the case, however, since in the straight hair of the natives of Northern Australia (as depicted by Mr. Earle) and of many other parts of the continent, an approach is made to the Alfuros of Gilolo, if not still further to the Malays themselves. It is noteworthy, moreover, that an affinity has been found by several observers between the Australian aborigines and those of southern India, which of course must form part of the Asiatic area to which Mr. Wallace refers the origin of the Malayan race. We should have been glad if our author had told us whether these aboriginal tribes of southern India have any affinity with the "Negritos" of the Philippines or the "Semangs" of the Malay peninsula. He says the latter "agree very closely in physical characteristics with each other, and with the Andaman islanders, while they differ in a marked manner from every Papuan race," although they are a quite distinct race from the Malay.

Whether this continental negritic element will not be found to form a connecting link, through the aborigines of Australia, between the Malays and Papuans, is yet uncertain, but the peculiar position of the Andaman islanders would appear to point to this conclusion, there being undoubtedly an approach in these people to the aborigines of Tasmania, although by many writers they are classed with the Malays.

There is a very important phenomenon, to which little attention has as yet been drawn, and which may assist in settling this vexed question as to the relationship between the dark and light races of the Malayan Archipelago. We refer to the existence side by side, not merely in this locality but also at other points around the basin of the Indian Ocean, of peoples having a similar relationship to each other. Such are the Hottentots and the Kafirs, the Hovas and the dark tribes of Madagascar, the light and the dark hill tribes of India. It is remarkable, moreover, that while all the dark tribes in these several localities have an evident affinity, the same may be said of the light tribes as well. Thus Mr. Wallace several times speaks of the "negro" characteristics of the Papuans, in which, if we substitute "African" for "negro," he agrees with many other observers. Again, reference has often been made to the Mongolic features of the Hovas and Hottentots, this character furnishing the chief ground of their supposed affinity with the Malays, which is confirmed by their habits and the inferiority of their intelligence in comparison with that of their dark neighbours. The Rev. William Ellis, however, was struck, not only with the *Polynesian* characteristics of the Hovas, but also with "the remarkably European cast of many of their countenances," a likeness which has been often noticed in the inhabitants of the South Sea Islands themselves. Thus, while on the one hand, the *Hovas* are said to resemble the Mongolic element of the Malayan race, on the other hand they are said to approach that of the Polynesian Papuans. We shall not be surprised if in Madagascar be found the key to the problem of the relationship of the races of the Malayan Archipelago. If the dark and light tribes of this great island are sprung from the same stock, and there is not at present the slightest evidence to the contrary, the same must be true of the dark and light races of the Archipelago. While, therefore, in the aborigines of Australia, we may perhaps have the most direct issue of the primitive stock from which these races have sprung, we see in the Madacasses, or in a cognate race which has long since disappeared, the secondary human centre from which both Malays and Papuans have branched off. It is possible that Mr. Wallace, although he asserts confidently that the Malays cannot have originated from the Papuans, or *vice versa*, may yet admit that

these distinct races may have sprung from a common stock at a very distant date. He, indeed, appears to believe in the former existence of a land connection of Celebes with Madagascar, and at an earlier period even with the African continent itself, and we see no reason why this now-submerged area should not be used to explain the present distribution of human races as well as to account for the peculiar affinities of the fauna and flora of various tropical regions.

According to this view we think it not at all difficult to understand how two races, apparently so distinct as the Malays and the Papuans, could have originated from a common stock, such as that of the darker tribes of Madagascar, who are directly connected with the one, and indirectly, through the Hovas, with the other. While Mr. Wallace allows that "the continued influence of physical conditions, and of natural selection," can have developed so great a difference as we often find between the dark Papuan tribes of the Austro-Malayan area and the fair tribes of Polynesia, he can hardly deny that similar influences, extending over a longer period, may have had the result we contend for. It is true that he says that nowhere so well as in the Malayan Archipelago "does the ancient doctrine—that differences or similarities in the various forms of life that inhabit different countries, are due to corresponding physical differences or similarities in the countries themselves—meet with so direct and palpable a contradiction." This, however, states merely half the question. The ultimate result depends on the state in which these forms were when first brought under varying physical conditions; and the length of time during which the new conditions have operated. Thus, if we imagine the southern hemisphere at the time when it presented vast continents, now submerged, to have been peopled by a homogeneous dark race; this race may, under later varying conditions of life, have given rise to several varieties, which, after the lapse of many ages, would show the differences we see now existing between the several branches of the Papuan stock and the dark peoples of the Asiatic and African continents. Again, there is nothing to prevent a still different series of geographical changes, giving rise to physical conditions which should originate an apparently quite distinct race, such as we see in the Hovas and the Malays, when compared with the darker tribes around them. We have an analogous case in the Semitic peoples, whose African affinities are gradually becoming recognised, and who present as great physical differences among themselves as do the dark and light tribes of Madagascar. In the hill-men, or *Arfaks*, of New Guinea we may perhaps see what the beginning of such a change would be. These people are described by Mr. Wallace as differing much in physical features:

"They are generally black, but some were brown like Malays. Their hair, though always more or less frizzly, was sometimes short and matted, instead of being long, loose, and woolly; and this seemed to be a constitutional difference, not the effect of care and cultivation." The tendency of our remarks is undoubtedly to derive all the races of man from a single primitive stock, but this accords, we believe, with Mr. Wallace's own expressed opinions. For this reason, also, we think he has spoken too strongly of the "radical" difference between the Malays and Papuans; and perhaps, after all, this is owing, in a measure, to a certain vagueness in his use of scientific words, which is to be deplored. For instance, our author speaks of the "races" of Polynesia belonging to the Papuan "race," and he adds that the Malays and Papuans cannot have sprung from the same "race." It would have been much better to use in these several cases the different terms, *peoples*, *race*, and *stock*. Again, our author speaks of the "negroes" of Africa, and he refers to Professor Huxley, as maintaining that "the Papuans are more closely allied to the negroes of Africa than to any other race." By "negro" is usually understood a native of Western Africa, to whom the Papuans do not bear nearly so much resemblance as they do to other African peoples. Probably, however, the real negro is not intended; and why not, if so, use a term from which the meaning would be clearly understood?

In his appendix Mr. Wallace gives us certain notes on the crania of the Malayan, Papuan, and African races. The conclusion he finds on the measurements derived from Dr. J. Barnard Davis, *Thesaurus Craniorum*, is that "the Australians have the smallest crania, the Polynesians the largest; the negroes, the Malays, and Papuans, not differing perceptibly in size." He adds, that "this accords very well with what we know of their mental activity and capacity for civilisation." The Australians, moreover, have not only the *longest* but also the *lowest* skulls; the negroes coming next to them in both these particulars, and the Malays having the shortest and the highest skulls; while the true Papuan skulls are longer than, and at the same time equal in height to, those of the Polynesian islanders. Although we think Professor Huxley is wrong in giving so little weight to characters derived from the skull in the classification of mankind; yet we can, on the whole, subscribe to Mr. Wallace's opinion, "that if we had a much more extensive series of crania the averages might furnish tolerably reliable race characters, although, owing to the large amount of individual variation, they would never be of any use in single examples, or even when moderate numbers only could be compared." So far as a reliable conclusion can be deduced from the data above referred to, we have the curious fact established that, while the race

which is the lowest in the scale of intelligence, the Australian, has the *longest* and *lowest* skull, the Malays, who have the shortest and highest skulls have not so great a cranial capacity ; nor, according to Mr. Wallace's own account, have they so active an intellect as the Polynesians. How far this result is owing to an undue development of the anterior lobes of the brain we are not in a position to say, but such a condition would undoubtedly tend to lessen the quickness of mental operation. As to the bearing of these facts on the notion of the origin of the Malays and Papuans, and with them the other dark and light peoples of the tropics from a common stock, we think they may be used to support this conclusion. The nearest approach to the primitive stock we have already found in the Australians, whose cranial development is the lowest in the scale. Next to these come the dark tribes of the Papuans and negroes ; then, in certain characters, the Polynesians ; and, lastly, the Malays, the increase of whose skulls in height is quite sufficient to account for the correlative change in other physical characters presented by them, and for their mental peculiarities. This assertion may perhaps be disputed, but we are convinced of its truth, and that in the proper understanding of the correlation of the physical and mental characters, and in that of the brain, with the other organs of the physical structure, can the solution of the vexed question of the origination of races be found.

We have not space to refer to the vocabularies collected by Mr. Wallace, beyond saying that they present distinct verbal affinities with the Malagays, and with certain East African dialects. Nor can we dwell so fully as we could wish on several matters incidentally mentioned by our author, which show a primitive connexion between the Malays and the Polynesians on the one hand, and the Malays and the peoples of the African continent on the other, which has yet to be explained. Such are the amusements of the Dyak children. The "cat's cradle," which Mr. Wallace found the young Dyaks knew so much about, is equally well known to the Polynesian Islanders. Again, the bellows used by the people of Lambock are the same as those found not only throughout the Malayan Archipelago, but also in Madagascar, and, with little alteration, in most parts of the African continent. The custom of "somali," practised by the Timorese, is no doubt, as our author states, exactly equivalent to the Polynesian *tapu*, but it is not by any means unknown on the western side of the Indian Ocean. The disuse of the common fowl as an article of food, which probably has had a superstitious origin, is a wide-spread African custom, and it is curious to find that in various parts of the Malayan Archipelago, as in Africa, from the Congo to the Shire, and even to Senegambia, the village markets are held under the shade of the fig-tree. With these

remarks we must bring this notice to a close ; and, notwithstanding we have seen fit to criticise some of our author's conclusions, we welcome the work before us as a valuable contribution to anthropological scientific literature, and we recommend it to our readers, not only on this ground, but also as containing much other interesting matter relating to the Malay Archipelago and the productions of its numerous islands. The whole design of the work is much above that of an ordinary book of travels, and even in the absence of any very stirring incidents, it will amply repay the perusal, not merely of the scientific, but of the general reader.

BALDWIN ON HISTORIC ANTHROPOLOGY.*

MR. BALDWIN'S work is of considerable interest to the student of historic anthropology or of ethnology. The study of the traditions, mythologies, fragmentary records, and mouldering remains of the prehistoric ages proves that civilisation was more ancient than history. The Ethiopians or Cushites of Arabia have no history, but they had a civilisation of no mean order, and a commercial and maritime enterprise which induced and enabled them to colonize the ancient world. In the early traditions and literary records of the Greeks, Arabia is described as Ethiopia. The countries on the Upper Nile were called Ethiopia, because they were first colonies or dependent provinces of the more ancient kingdom of Ethiopia in what is now called Arabia. Mr. Forster, in his historical geography of the Old and New Testament, says, "it is matter of fact familiar to the learned reader that the names Ethiopia and Ethiopians are frequently substituted in our English version of the Old Testament, where the Hebrew preserves the proper name of Cush, and the name 'Cush,' when so applied in Scripture, belongs uniformly not to the African, but to the Asiatic Ethiopia or Arabia" (vol. i, p. 12).

Strabo, correcting a popular error of the same kind in his day, says: "If the moderns have confined the appellation Ethiopians to those only who dwell near Egypt, this must not be allowed to interfere with the meaning of the ancients." Professor Rawlinson informs us that the uniform voice of primitive antiquity spoke of the Ethiopians as a

* *Prehistoric Nations: or, Enquiries concerning some of the Great Peoples and Civilisations of Antiquity, and their probable relation to a still older civilisation of the Ethiopians or Cushites of Arabia.* By John D. Baldwin, M.A. London : Sampson Low, Son, and Marston, Fleet Street, 1869.

single race dwelling on the shores of the Southern Ocean, and from India to the Pillars of Hercules. It is of this ancient and interesting race that Mr. Baldwin has gathered up all the scattered records and notices, and has made out a case in their favour claiming for them the earliest prehistoric importance in the civilisation of mankind.

In the earliest Hebrew traditions, older probably than Abraham, Cush, translated Ethiopia, is mentioned as a country or geographical division of the earth. In the tenth chapter of Genesis we are told that Canaan, Cush, Miriam, and Phut, were the children of Ham ; and Rawlinson, in his *Herodotus*, informs us that the Hamitic races seem to have been the first people of Western Asia. These Hamites were the founders of most of the cities of antiquity, which sometimes have retained their primitive names, and sometimes appear to have exchanged them for Semitic appellations, the descendants of Cush, the eldest son of Ham, are supposed to have resided for many ages in Chusistan, or Pusiana, a district to the south-east of Babylon and west of Persia. The great period of the Cushite race had closed many generations before the time of Homer, but great communities and offshoots remained not only in Egypt, but also in Southern Arabia, in Phenicia, and Africa. This active and enterprising people of ancient Arabia, whose territory appears to be double that of France, were more advanced than the rest of the world in civilisation, as may be proved by their commercial and maritime enterprise. Their geographical position gave them considerable advantages, for lying between the Red Sea and the Persian Gulf, they had at the same time at their command the shores of the Indian Ocean and the Mediterranean Sea. Hoeven says:—

“From the remotest time to the present the Ethiopians have been one of the most celebrated, and yet the most mysterious of nations. In the earliest traditions of nearly all the more civilised nations of antiquity the name of this distant people is found. The annals of the Egyptian priests are full of them—the nations of inner Asia on the Euphrates and the Tigris have interwoven the fictions of the Ethiopians with their own traditions of the wars and conquests of their heroes ; and at a period equally remote they glimmer in the Greek mythology. When the Greeks scarcely knew Italy and Sicily by name, the Ethiopians were celebrated in the verses of their poets ; and when the faint gleam of tradition and fable gives way to the clear light of history the lustre of the Ethiopians is not diminished. They still continue to be the objects of curiosity and admiration, and the pen of clear-sighted and cautious historians often places them in the highest rank of knowledge and civilisation.”

Perhaps the earliest offshoot of the Cushite race was the Chaldean. The Assyrian empire was preceded by a much older kingdom of

Chaldea, which existed during a much longer period of time, and in matters of race and language had but little in common with the Assyrians.

The old Sanscrit writings of Hindostan describe the country of Cush as extending from the shores of the Mediterranean Sea to the borders of India, and they call it Cusha Dwipa. A regular history of Chaldea was written by Berosus in Greek three hundred years before the Christian era. Berosus was a Chaldean priest of Belus, and the materials of his history were supplied by archives then existing in the temple of Belus at Babylon ; but, though the work of Berosus is lost, fragments have come down to us in the writings of Josephus, Eusebius, Syncellus, and several Christian fathers. Berosus begins with a dynasty of eighty-six kings, of whose time he knew nothing. The astronomical records found at Babylon began with the date of 2234 B.C., but Rawlinson found a Cushite or Hamitic inscription in Susiana in which there is a date that goes back 3200 years before Christ.

The three great prehistoric historians, if we may be allowed to use such an anachronism (because their histories were, in the main, lost), we refer to Manetho, Berosus, and Sanchoniathon, have been too much overlooked and discredited by modern authors. Modern research has, however, done much to increase the confidence in which we can rely on their statements as to the antiquity of man. Bunsen has done much to corroborate what was too universally discredited in the records of Manetho—the discoveries of modern days have disposed us to place more reliance on the fragments of Berosus and Sanchoniathon, which have come down to posterity in the writing of others ; and if, as Sir Isaac Newton admits, letters were known in the Abrahamic line for some centuries before Moses—if they were the Chaldaic letters, which are nearly similar to the Samaritan and old Phenician, we have a clue in the Cushite characters which may lead us by indisputable steps to the first inventors of alphabetic writing.

A good summary of what has been found in the ruins of the Chaldean cities is given in the first volume of George Rawlinson's *Five Great Monarchies of the Ancient World*. Our author considers it of considerable importance in his line of argument, and derived, as it is, from undoubted facts, we think the following brief conclusions may be considered incontrovertible :—

1st.—The ruins furnish, what appears to be, conclusive evidence that civilisation was brought to Chaldea from Ethiopia, that is to say, from Arabia. In the inscriptions the two countries are connected in such a way as to make no other conclusion possible. Their vernacular name for Ethiopia is Mirukh, and its maritime enterprise is distinctly recognised.

2nd.—The oldest city and first capital was Ur. It seems to be understood that the settlement of the country began with the building of Ur. At a later period Erech was for a time the royal city, but Nipher, or Niffer, was the name of the city of Belus, or the more ancient Babylon.

3rd.—The language of ancient Chaldea found abundantly in these ruins and the forms of the letters are similar to those found in the ruins of Southern Arabia.

Thus not only is the statement of Berossus confirmed that Chaldea was a cultivated and flourishing nation governed by kings long before the time of Babylon, but the identity of language argues similarity of origin.

Sanchoniathon, the most ancient, as also the most celebrated Phœnician historian (several fragments of whose history have been preserved by Eusebius) attributes the art of alphabetic writing to the Phœnicians or Cushite race ; and both Greek and Roman authors agree in receiving the statement which Pliny and Lucan do not hesitate to acknowledge,

Ipsa gens Phœnicum in gloria magna literarum inventionis et siderum navaliumque ac bellicarum artium.—*Pliny, Nat. His.*, lib. v, cap. 12.

*Phœnices primi, famæ si creditur ausi
Mansuram rudibus voceram signare figuris.*—*Lucan, Lib. iii, v. 220*

But these inventors of alphabetic writing were also well versed in astronomy and navigation. They were the greatest commercial people of all antiquity and engrossed all the commerce of the western world. If the art of alphabetic writing originated with the Phœnicians, we must attribute it to a very early period. If Ur was the most ancient city, we find in the history of Abraham that at the age of seventy years he left it to settle in Haran in Canaan. Arithmetic and astronomy were probably carried by Abraham into Egypt with the art of alphabetic writing. Be that as it may, the antiquity of the city of Hur is indisputable. It was situated at the mouth of the Euphrates, with the open sea before it. But its ruins are now one hundred and fifty miles from the sea—the Persian Gulf having retired that distance, from the sediment brought down by the Euphrates and the Tigris. So great a geological change carries us back into the depths of antiquity ; yet the epoch at which the city of Hur was thus founded might be made matter of calculation to one like Sir Charles Lyell, who has speculated on the age of the valley of the Mississippi. The question is a simple one, namely, how much per century does the Persian Gulf retire, and in how many years would the distance equal one hundred and fifty miles ?

Dr. Forster, in the Appendix to his work on Arabian Geography, gloried over the Himyaritic inscriptions as “ the oldest language in the

world," and "the first alphabet of mankind ;" and this alphabet the Phenicians carried with them to southern and western Europe. The names of the letters and some of the forms seem to indicate some hieroglyphic origin. *Aleph* means an ox, *beth* a house or temple, *gimel* a camel, the great beast of burden of the desert. Sir William Drummond says, in his "Origines," there seems to be no way of accounting for the early use of letters among so many different nations, or for the resemblance which existed between some of the graphic symbols employed by those nations, than by supposing hieroglyphic writing among the psalmists ; and Sir William Drummond says we can hardly hesitate to assign the original invention to a period before the Hamite race had broken up and divided. Thus Sanchoniathon may have affirmed, with some truth, that he had perused the writings of Thoth, who is said to have taught the descendants of Cush the art of writing.

In 1862-63 Mr. William Gifford Palgrave, who had long resided in the east, was well versed in the Arabic language, and well acquainted with Mohamedan lore, spent six months in Central Arabia travelling through it from west to east. He began his journey, labouring under a popular delusion, supposing, like most people, that Arabia was almost exclusively the territory of nomads—the wandering Bedouins. He accordingly made his preparations for traffic and intercourse with the natives in accordance with this supposition, which he soon found was a grievous mistake. He found, instead of wandering Bedouins, who were rather described as an inferior race, a rich and beautiful country, a settled and civilised people—cities, towns, and villages, agriculture, and a regular government. Central Arabia is an extensive and fertile land, diversified by hills and valleys, its great plateau comprising half of the whole peninsula, about five hundred thousand square miles, twice the extent of France. He found it occupied by two kingdoms, Shomer and Nejed, the former consisting of five, the latter of eleven provinces ; the soil belonged to its cultivators and not to the government. In Sedyr, especially, he found an elegant and copious hospitality conducted with a dignified and even refined politeness. Hayel, the capital of Shomer, is surrounded with fortifications, with bastion towers, some round some square, and large folding-gates at intervals. It had upwards of twenty thousand inhabitants. Riad, the capital of Nejed, is large and square, with high towers and strong walls, a mass of roofs and terraces, and for full three miles over the surrounding plain waved a sea of palm trees above green fields and well-watered gardens ; while southward the valley opened into the great and more fertile plains of Yemanah, filled with groves and villages. In the province of Sedyr, Mr. Palgrave reports "the dominant tone of society

is that of dignified and even refined politeness." The industry, culture, and general condition of the people seemed above what is found in neighbouring countries. Coming to the plain of Kafseem he says, "Before us, to the utmost horizon, stretched an immense plain, studded with towns and villages, towers and groves, all steeped in the dazzling noon, and announcing every where opulence and activity." It is very remarkable how ignorant we have been of the existing state and condition of the country, as well as the people of modern Arabia. There is no reason to doubt that a considerable portion of that which is now sand and desert, in old times was well cultivated and full of populous life, as the numerous ruins strewed over the surface still testify.

"This remarkable country," says Mr. Baldwin, "had no lack of fitness to be the home of a great people; and in the days when Balbec and Petra were flourishing cities, and Arabia was the busy commercial centre of the civilised world, it could have supported a hundred million people as easily as France sustains now forty millions. It had no lack of resources for the great part played by its people in human affairs. If England and Spain would colonise and fill the whole American continent in the space of two or three centuries, what might not have been done by the ancient Arabians in the course of twenty centuries?"

Mr. Baldwin has, we think, very successfully demonstrated the claims of the Arabian Peninsula to a much greater importance in the civilisation of the human race than historians had previously imagined. The relations of the ancient Cushites to the earliest developments of civilisation in Egypt, Chaldea, Hindustan, and Africa, are worked out with considerable research and acumen. There is much corroboration of Mr. Baldwin's views in the acknowledgment of Sir Henry Rawlinson, who sees a common origin of the Chaldaean and Egyptians, and finds it even in the character of their writing, which he thinks must have been in existence before the two people separated. Lepsius draws the same conclusions, from the resemblance of Egyptian and Cushite writing; thus corroborating what Diodorus Siculus says in his third book, "The Ethiopians say that the Egyptians are a colony drawn out of them by Osiris." And thus we may see the reason why the annals of the Egyptian priests are so full of the Ethiopians, if they played a foremost and wonderful part in the affairs of the world before Egypt became the abode of a civilised community. This is a wide subject and well worthy the attention of linguists and archæologists, and likely to form a new and interesting chapter in the development of pre-historic man. Renan, in his *Histoire Générale des Langues Sémitiques*, in his preface to the second édition, has promised his readers an essay in order to establish that it is necessary to admit into the history of the civilization of the ancient world, a third element

which is neither Semitic nor Aryan, which may be called Ethiopian or Cushite ; and he adds, in allusion to the investigations of Oppert, " that if these hypotheses shall be confirmed by a more complete investigation, it will become necessary to establish a group of semitico-Cushite languages, including the Himyaric, the Gheez, the Mahic, and the language of the Babylonian inscriptions.

We confess ourselves somewhat surprised to find that a writer so liberal in his general views as our author should have gone out of his way rather to make some weak and irrational remarks on the development hypothesis of Mr. Darwin. He says very erroneously that "Advocates of what is called the 'development theory,' as well as champions of the narrow chronologies, find it convenient to assign the first appearance of civilisation to a very modern date in the great pre-history past." We are not aware of any passage in Mr. Darwin's works which at all assigns the first appearance of civilisation to a very modern date. Our author, so generally fair and well informed, must have taken a very erroneous view of Mr. Darwin's statements. Sir Charles Lyell, fully adopting, as he does, in the tenth edition of his unrivalled work on geology, the development theory as it has been propounded by Mr. Darwin, is one of the ablest advocates of the antiquity of man, which he carries back indeed far beyond the "narrow chronologies." The origin of man is a very different theme from the antiquity of pre-historic civilisation—and it was scarcely worth while for Mr. Baldwin to allude disparagingly to those painstaking labours of Mr. Darwin, which have led him step by step to his avowed hypothesis, which like the "Nebular Hypothesis" in astronomy, serves at any rate to enlarge our views as to the processes by which our present might have been evolved. It is no degradation of man to say he was created out of the dust of the earth ; much less to have been developed through the inferior grades of the animal world.

Although the duties of daily life, and the all absorbing interests of the present must ever occupy the main attention and interest of mankind, we are impelled by an irresistible curiosity to extend our interest and inquiries into the past and the future. The great business of life must ever occupy man's chief attention ; but man is a studious being, and never rests without extending his views in every direction, and drawing his inferences as to the antiquity of the world in which he is placed, as well as the race of which he is the present representative of a long line of ancestry. We trace back the thread of history with an ever recurring interest, till we arrive at its extreme limit, which terminates in fable and allegory. Man must have struggled onward and onward for ages before he became a recorder of his own history. It is vain and useless to look for any chronology before man learned

to record—no history can give us satisfactory views of man's antiquity. The short period of a few thousand years which has been adopted by a short-sighted class of theologians, does not afford extent of time necessary for the development of the different phases of civilisation, which come under the cognisance of history, much less of those ages of slow progress, which must have preceded the historic era. The cyclical schemes which computed by tens of thousands and hundreds of thousands the years of man's existence, are more in accordance with probability than the limited period of six thousand years of Archbishop Ussher, and other commentators on the Jewish chronology. Sir Charles Lyell's lowest estimate of the time required to form the present Delta and alluvial plain of the Mississippi is more than one hundred thousand years. Agassiz having ascertained the average rate of coral growth, estimates that the gradual formation of the southern half of Florida must have filled a period of one hundred and fifty thousand years, and yet the whole is of post-tertiary origin; the fossil zoophytes and shells being all of the same species as those now inhabiting the neighbouring sea. These are only two of the many approximating estimates which geologists have been obliged to form to get some relative glimpses of the antiquity of the earth.

Anthropological News.

MEMOIRS OF THE ANTHROPOLOGICAL SOCIETY.—We are glad to hear that the third volume of the *Memoirs* of the Society will be issued to the Fellows and the public subscribers in a few days. The volume will be published by Messrs. Longman and Co., price One Guinea. We understand that this volume will contain a long-expected paper from Dr. John Beddoe, the accomplished President of the Anthropological Society of London, "On the stature and bulk of the inhabitants of the British Islands." We shall hope to be able to give our readers some critical remarks on this volume in our next issue. In the meantime, we congratulate the Fellows of the Society that their third volume of *Memoirs* should contain communications from three of the most distinguished and erudite Anthropologists of this country, viz., Dr. Barnard Davis, Dr. John Beddoe, and Dr. John Thurnam.

M. DE MORTILLET has recently proposed to the French Academy of Sciences a chronological arrangement of caverns and rock-shelters, based upon the distinctive characters of the implements and weapons found in those resorts of our earliest ancestors in western Europe. He defines four epochs, which he names after the stations where they are most typically represented; thus following the example of geologists and of Messrs. Hün and Rütimeyer in the *Crania Helvetica*. The *Moustier Period*, so called from the Grotto of Moustiers, situated in the commune of Peyzac (Dordogne), is characterised by stone axes of the almond or "langue du chat" type, and by flint flakes

smooth on one side, and more or less finely chipped on the other. Instruments of bone are almost entirely wanting. *The Solutré Period*, named from a station at the foot of a magnificent escarpment in the Saône et Loire, is distinguished by the further development of the flint flake, and by the disappearance of the almond-shaped axe. The flakes are finely clipped on both faces and at both ends, and would seem to have furnished the chief domestic tool of the period. Simple flakes are rare, as also are bone implements. The weapon of this period is an angular club, which is again found in the following epoch. In the *Aurignac Period*, named after the classic locality in the Haute Garonne, the number of bone implements increases considerably. The angular club still remains, but the points of spears and arrows are of bone instead of flint; their essential character being that the base contains a cavity for the insertion of the head of the shaft. The quaternary fauna is still largely represented. *The Madeleine Period* (commune de Turzac in the Dordogne) is characterised by arrow and spear-heads of bone and reindeer-horn, so shaped at the lower end that they enter into the shaft, and not the shaft into the head, as during the previous period. There are a number of artistic products. Animals of extinct species disappear, and the fauna is represented by animals now inhabiting colder regions of the reindeer. The famous deposits of Eyzies and Bruniquel in France, Furfooz in Belgium, and Schumennen in Wurtemberg, belong to this last period. Following the four epochs enumerated, which may be characterised, as a whole, as the rough stone age, M. de Mortillet places the period of polished stone.

"We have heard lately almost too much about the prehistoric man, and the supply of flint implements, perforated shells, and split marrow-bones, begins to exceed the demand; but a recent discovery in the département de la Dordogne of human skeletons coeval with the mammoths, and undeniably appertaining to the earliest quaternary period, present features of such unusual interest that the French government have sent M. Lartet, the distinguished paleontologist, to make a report on the subject. He reports that the bones of five skeletons have been discovered, and that they belong to some gigantic race whose limbs, both in size and form, must have resembled those of the gorilla. But the simian origin of man must not be inferred from these analogies, as the skulls, of which only three are perfect, afford testimony fatal to this theory, having evidently contained very voluminous brains. The skulls are now in the hands of a committee of *savants*, who are preparing an exhaustive craniological report."—*Pall Mall Gazette*, June 16th, 1869.

BIBLIOGRAPHY OF ANTHROPOLOGICAL LITERATURE.—In our next issue we purpose to give our first issue of a bibliography. Titles of works or papers should be forwarded to us immediately on publication.

We regret to have to record the death of Hugh J. C. Beavan, F.S.A., Barrister-at-Law, and formerly one of the officers of the Anthropological Society of London, at the early age of twenty-eight. Mr. Beavan's chief labour in connexion with the Society was that of editing Georges Pouchet's work on *The Plurality of Races*; a paper of his on "The People of Spain" is also published in the *Memoirs of the Anthropological Society*.

ANTHROPOLOGY AT THE BRITISH ASSOCIATION.—The Anthropological Society of London have appointed a committee to attend, as delegates, the forthcoming meeting of the British Association at Exeter. We hear that a large number of papers are likely to be presented for reading at the Anthro-

pological department; and amongst others, one of considerable local interest, by the President of the Anthropological Society of London (Dr. John Beddoe), on "The Anthropology of Devon and Cornwall." The Honorary Secretaries of the Committee appointed by the Society have announced that they will be happy to take charge of communications on Anthropology, if the same are sent to the rooms of the Society, 4, St. Martin's Place, Charing Cross.

THE ANTHROPOLOGICAL SOCIETY OF MADRID, whose meetings have been delayed for two years, owing to the political changes which Spain has undergone, had their second inaugural meeting on the 21st of February last. Previously they had only had the one meeting, reports of which have already appeared in the *Anthropological Review*. The President is Don Francisco Fernandez Gonzalez; the Secretary, Don Francisco de Asis Delgado Jugo.

THE PRESERVATION OF ANCIENT MONUMENTS.—Recently in the House of Commons Sir H. Verney asked the First Commissioner of Works to consider whether measures could be adopted to place the ancient monuments, now existing in the country, under the protection of some authority which might prevent their destruction. Mr. Layard said that the question was one of very great importance. There were a great many royal and other interesting sepulchral monuments in our cathedrals and churches that had been allowed to fall into decay, and also a great many monuments of national and archaeological interest that were being entirely destroyed. Such a state of things was not creditable to the country; and in France and other countries measures were being taken to preserve such monuments as public property. When he came into office, his attention was directed to this subject, and the first step he took was to endeavour to obtain a list of such monuments as it was thought advisable to place under some kind of protection, and he addressed a letter to the Society of Antiquaries, and requested them to prepare him such a list, if possible. His application was met in the most cordial spirit by Lord Stanhope, the President, and the Fellows of the Society, and they had taken steps which he trusted would enable them to obtain such a list, and enable him to submit some proposal to the House for the preservation, not only of these monuments, but others of a national and archaeological character. Some objection might be taken to such a course as interfering with the rights of private property, but he thought they might be easily got over. He was sorry to say a case had recently occurred where a work of great national and archaeological value had been destroyed in a manner, if the accounts were true, which showed an act of Vandalism one could hardly think it possible to be committed in these days.

We think that the best thanks of the Archaic Anthropologists of this country are due to both Mr. Layard and to the Society of Antiquaries; and we feel sure that they will do all they can to assist their scientific brethren, so admirably presided over by Lord Stanhope, in protecting the archaic remains of the British Isles.

We regret that we are unable, this quarter, to give a continuation of the articles on "The Localisation of the Functions of the Brain, with special reference to the faculty of Language," or "The Report of the Proceedings of the Anthropological Society of Paris." Want of space, also, prevents us from giving a continuation of our summary of Carl Vogt's works on Microcephaly.